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THE DOG'S
MEDICAL DICTIONARY

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AN ENCYCLOPÆDIA OF THE DISEASES,
THEIR DIAGNOSIS AND TREATMENT,
POISONS AND THEIR ANTIDOTES,
AND THE PHYSICAL DEVELOPMENT
OF THE DOG

BY

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THE REVISER
DEDICATES THIS BOOK
TO
P. E. B.
WHO LIKE HIMSELF
WISHES IT TO BE A REAL HELP
TO OUR FRIEND THE DOG
IN HIS HOUR OF NEED
AND HOPES IT MAY PROVE A
WORTHY SUCCESSOR
TO THE
ORIGINAL WORK
OF HIS LATE PARTNER

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LIST OF ABBREVIATIONS

B.P. British Pharmacopœia

B.W. Burroughs Wellcome

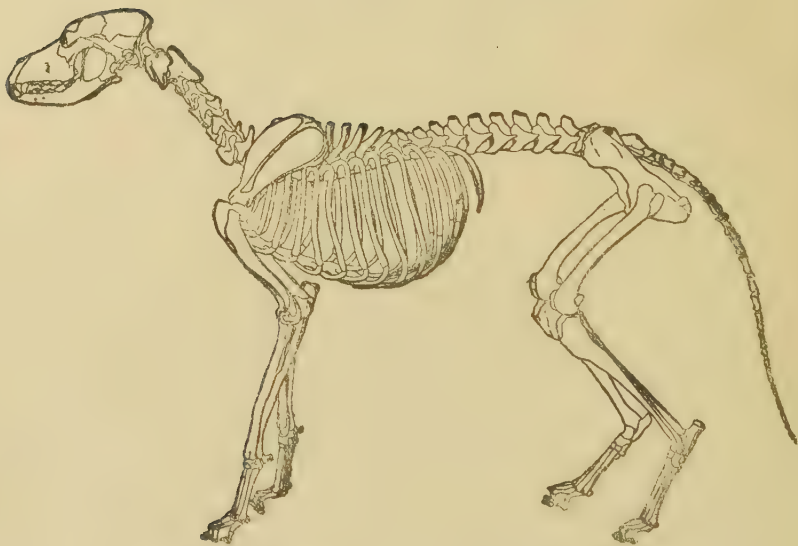
Excip = Excipient

The base in which drugs
are mixed to make pills

Q.S. = Quantum sufficit

Sufficient quantity

THE SKELETON OF THE DOG



From "The Comparative Anatomy of the Domesticated Animals."

By permission of Sir JOHN MCFADYEAN, M.B., C.M., B.Sc., F.R.S.E., F.R.C.V.S.

NAMES OF BONES AND ARTICULATIONS

SKULL

- Commencing with the nose,
Nasal bones.
 Over the eyes,
Frontal bones.
 Behind these,
Parietal bones.
 Behind these and forming peak,
Occipital Crest.
The Orbit, the bony cavity containing the eye.
The Upper Jaw, formed by the bones containing the upper teeth.
Lower Jaw or Lower Mandible, the bone containing the lower teeth.
 For teeth, see p. 277, in the body of the book.
The Vertebral Column (containing the spinal cord) comprises—
 7 Cervical Vertebrae.
 13 Dorsal or Thoracic Vertebrae.
 7 Lumbar Vertebrae.
 3 Sacral Vertebrae.
 20 or 22 Coccygeal or Tail Vertebrae.
 (The number is according to breed.)
 The Cervical are neck bones.
 The Thoracic or Dorsal are above the lung cavity.
 The Lumbar are above the abdominal cavity.
 The Sacral or Pelvic bones are above the pelvic cavity.
 The Coccygeal constitute the bony part of the tail.

RIBS

- The dorsal vertebrae are furnished with articular facets for the accommodation of 13 pairs of ribs.
 9 sternal attached to the sternum.
 4 asternal usually are floating, not attached.
Sternum = breast bone.
 Attached to lower end of ribs by costal cartilages.
The Pelvic Skeleton.
 Forms a cavity continuous with that of the abdomen, containing bladder, rectum, and prostate gland in the dog, and in the bitch bladder, rectum, uterus and vagina.
 The pelvic cavity is made up of the fusion of three bones, ileum, pubis, and ischium, and is attached above to the Sacrum. These bones when fused, as in the adult animal, are known as the Innominate bone.
Thoracic or Fore Limb Scapula or shoulder blade is the highest bone; this articulates at its lower end with the

Humerus, the second bone, and there forms the shoulder ball and socket joint. The humerus extends downwards and backwards; the lower end of this bone articulates with the bones of the fore-arm, viz.—

Radius and Ulna.

Long thin bones articulating one with the other but allowing only slight movement and in some old dogs quite ossified. The superior part of the Ulna forms the point of the elbow.

Carpus or wrist situated at the lower end of the fore-arm is made up of seven or eight bones in an upper and lower row. Below the carpus and articulating with it are the five

Metacarpal bones.

They each articulate with the digits at their lower ends; each of the

5 *Digits*

Is composed of three

Phalanges.

The first or inside digit usually has only two phalanges and corresponds to the human thumb and in the dog is called the

Dew Claw.

The Pelvic or Hind Limb.

The Hip joint is formed by a ball and socket formation; the cavity is known as the Acetabulum into which fits the articular head of the *Femur*, a long massive bone extending down and forward to the *Stifle Joint* below; this is the equivalent to the human knee. The lower extremity of the Femur carries in front a pulley-like groove for articulation with the patella and behind this two oval condyles, which articulate with the upper extremity of

The Tibia; between these condyles and the articular surfaces are two shock-absorbing pads, viz. the Semilunar cartilages.

The Patella or Knee Cap is long and narrow and held in place by ligaments and groove in femur and surrounding tissues. When the groove in femur is ill developed as in many breeds of small toy dogs, displacement is easy and frequent.

The Tibia, about the same length as the femur, extends downwards and backwards from the Stifle to the Hock; it carries a small facet at each end for articulation with the

Fibula, a slender bone extending the whole length of the tibia.

The Tarsus or Hock comprises seven bones and corresponds with the human ankle.

The Metatarsus consists of five bones and the arrangements resemble that of the metacarpal bones in the front legs.

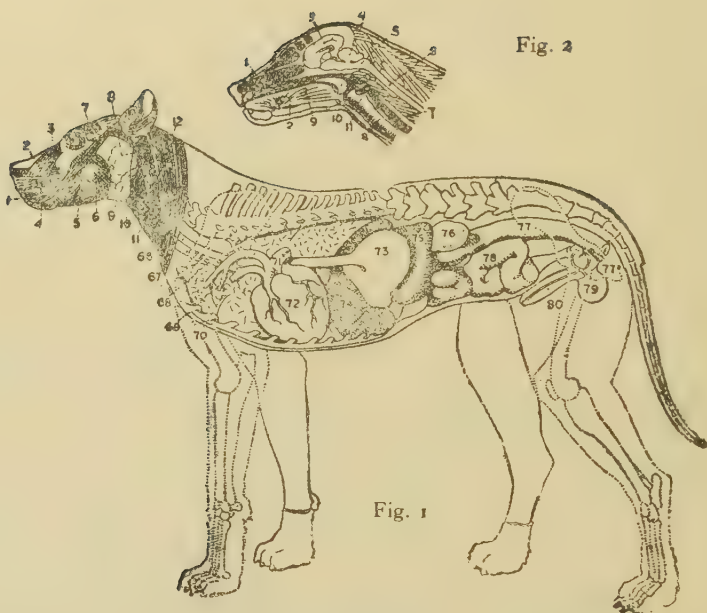


Fig. 2

Fig. 1

Copied by permission of Baillière, Tindall & Cox from their "Atlas of the Dog, its Anatomy and Physiology."

Fig. 1.

- 1 Orbicularis oris.
- 2 Levator nasolabialis.
- 3 Levator labii superioris proprius (levator of upper lip).
- 4 Dilator naris lateralis.
- 5 Zygomaticus.
- 6 Masseter (large and well developed in the dog).
- 7 Scutularis.
- 8 Parotid Gland.
- 9 Submaxillary Gland.
- 10 Parotido-auricularis.
- 11 Sterno-hyoideus.
- 12 Brachio-cephalicus.

(Between figures 8 and 12 on top the Elevator and Depressor muscles of the ear are to be seen.)

- 66 Oesophagus (gullet).
- 67 Trachea (wind pipe).
- 68 Left Carotid Artery.
- 69 Anterior Aorta.
- 70 Lungs.
- 71 Posterior Aorta.
- 72 Heart.
- 73 Stomach.

- 74 Liver. (The line in front of Liver shows the Diaphragm separating Thoracic from Abdominal cavity.)

- 75 Spleen.
- 76 Kidney (left).
- 77 Rectum.
- 77A Anal Glands (position) just inside rectum.
- 78 Intestine.
- 79 Testicle.
- 80 Penis.

(Midway between 76 and 79 is the seat of the Bladder and behind this the seat of the Prostate gland in males, uterus in females.)

Fig. 2

Section of Head and Neck.

- 1 Nasal septum.
- 2 Tongue.
- 3 Cerebrum.
- 4 Cerebellum.
- 5 Medulla oblongata.
- 6 Spinal Cord.
- 7 Oesophagus (gullet).
- 8 Trachea (wind pipe).
- 9 Hard palate.
- 10 Soft palate.
- 11 Larynx, containing vocal cords.

THE DOG'S MEDICAL DICTIONARY

ABDOMEN: *See* various sections treating of its Diseases, Operations, and Injuries.

ABORTION: Miscarriage, Premature Labour, *see* p. 176. Abortion is both difficult and dangerous in canines owing to the foetus being carried in the horns of the uterus and not in the uterus itself. If it is absolutely necessary to remove the foetuses, Cæsarean Section should be made.

ABRASIONS: When the skin is rubbed sore.

Treatment: Clean affected part with hot boracic lotion (teaspoonful of crystals to tumbler of hot water); then if severely rubbed, paint once a day for 2 or 3 days with tincture of iodine; then keep clean as above and use boracic ointment twice a day; bandage to prevent licking.

ABSCESS: A definite area containing pus which may occur in any part of the body from a variety of causes owing to the introduction of dirt organisms.

Symptoms: Enlargement of affected part through presence of pus; rise in temperature; pain is mostly present, even from the beginning. (Differentiate between ruptures (hernias) and abscesses before treating or opening.)

Treatment: Hot swabs, hot fomentations, hot poultices, repeated until a soft "point" shows itself; the incision should be freely opened at the lowest part of abscess for drainage, after removing pus by pressure. Syringe freely with boracic lotion, blood-heat (101°); plug with carbolic gauze, and bandage; repeat twice daily until cavity heals from the bottom, or pus may re-form.

ACCIDENTS : *See* FRACTURES, WOUNDS, ETC.

ACIDITY OF STOMACH, or GASTRIC CATARRH : *See* GASTRITIS.

ACNE : Pimples, an inflammation implicating the glands and follicles of the skin, due to the presence of pus-forming organisms.

Symptoms: Nodules or pustules, at first principally on face, may show on body or legs; not much irritation, but in severe cases inconvenience and pain, especially if deep-seated in skin, or confluent.

Treatment: Apply lotion frequently, after squeezing pustules and washing with boracic lotion.

Recipe:

Milk of Sulphur	1 ounce.
Glycerium Boracis	1 ounce.
Liquor Bismuth	1 ounce.
Water to	8 ounces.

Give following powders twice a day with food:—

Recipe:

Reduced Iron	6 grains to 2 scruples. ¹
Bicarbonate Potash	1 scruple to 2 drachms.
Sulphate Magnesia	$\frac{1}{2}$ drachm to 4 drachms.
Mix.	

Divide into 12 powders—one to be given twice a day with food.

If severe case open pustules, remove contents, and paint with tincture of iodine.

Diet: Some meat mixed with green food (boiled dandelion leaves), and bread or biscuits.

ALOPECIA : Baldness due to loss of hair, caused by impaired nourishment of the part, and of nerve origin in the skin; no irritation. Is seen with debility, during pregnancy, while suckling puppies, in febrile diseases, etc.

¹ According to the size of the dog. See p. 81.

Treatment: Good nourishing, easily digested food; use a stimulating lotion on and round affected parts.

Treatment: The Lotion:

Recipe:

Tr. Cantharides		2 drachms.
Oil Rosemary		2 drachms.
Glycerine		4 drachms.
Water to		8 ounces.

Mix.

Apply twice a day.¹ Avoid the parts near eyes.

Or *Liniment:*

Liquor Ammon. Fort.		$\frac{1}{2}$ drachm.
Rectified Spirits		8 ounces.

Apply with friction twice a day to affected parts.¹

In obstinate cases a single painting over the bare parts with liquor epipasticus is useful. This remedy should only be applied to a small part of the skin at one time and licking must be prevented by using a coat, or tongue will be blistered.

Recipe:

Resorcin		2 drachms.
Salicylic Acid		30 grains to 1 drachm.
Castor Oil		1 drachm.
Oil of Bergamot		1 drachm.
Alcohol		6 ounces.

Rub into affected parts once a day.

Give internally homeopathic trituration nux vomica 3 x, as much as will cover a sixpence, three times daily for fox-terrier size dog.

AMAUROSIS: A term happily, from its vagueness, becoming obsolete, signifying partial or total loss of vision. *See EYE, DISEASES OF.*

AMENORRHEA: Absence of menstruation or œstrum. *See ŒSTRUM.*

¹ These must not be used while puppies are suckling.

ANÆMIA: Deficiency of blood, or deficiency in the relative number of its red corpuscles. May be due either to insufficient or improper food supply and excessive drain or blood-waste, or to repeated hæmorrhages, or inability to assimilate food.

Symptoms: Mucous lining of eyelids and gums, and mouth pale or blanched; in advanced cases there is wasting, loss of power and energy, thirst, especially if accompanied with a temperature, which latter is variable, as also is the condition of bowels.

Treatment: Easily digested food such as underdone or raw meat; bone marrow in form of Virol; blood expressed from raw beef; Plasmon biscuits for small breeds. If worms are present, treat for them.

Recipe:

Arsenious Acid	.	.	.	.	1 grain.
Reduced Iron	.	.	.	.	2 drachms.

Make up into 40 pills or capsules—one twice a day after food for fox-terrier size dog.

ANÆSTHETICS: In the great majority of cases if chloroform is to be administered a surgeon should be employed; dogs do not take it well or safely when improperly given. Personally I prefer to use a chloroform-box to commence an anæsthetization, and when properly “under”, place patient on operating table and continue with chloroform inhaler; this method saves most of the struggling and a great deal of the consequent shock and bad after-effects.

The best way to administer chloroform is by one of Krohne & Sesemann’s inhalers. When this is used, it is almost impossible for any bad results to follow, as the chloroform is given so slowly. Failing one of these appliances, it may be given on a napkin folded so as to make a pouch in which the nose should be put; but it is necessary to muzzle the dog before commencing, otherwise he will be

sure to bite the operator. In giving chloroform it is necessary to commence with very small quantities; about twenty ¹ drops to half a drachm should be poured inside the pouch formed in the napkin, and then placed over the dog's nose. This should be repeated every two or three minutes until the dog lies quietly, and the eye is insensible to the touch. When a dog is under the influence of chloroform it is most important to watch the breathing, and if it becomes very slow, discontinue giving the chloroform immediately. If the breathing stops, remove the muzzle, draw the tongue out as far as it will come, hold to the nose, on a piece of lint, a few drops of strong ammonia, and resort to artificial respiration. Dogs always struggle very much against taking chloroform, therefore one should always be provided with one or more assistants to hold the dog securely while it is being administered.

The heart should be examined very carefully. Chloroform should be given on an empty stomach.

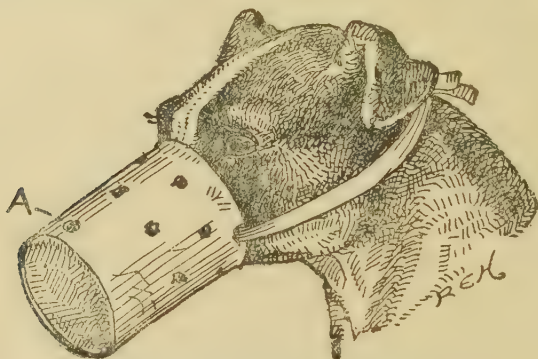
Anæsthetics may be local or general. Chloroform is used for a general anæsthetic, and one of the derivatives of cocaine, such as novocaine, or, much better still, "Waite's Anæsthetic", for local use.

Chloroform and cocaine are scheduled poisons and cannot be obtained without a veterinary surgeon's prescription.

If the patient is an old one, instead of giving pure chloroform, give a mixture consisting of equal parts of chloroform, ether, and alcohol mixed together, given in the same way as chloroform; or pure ether may be given. In this case it is necessary to give this anæsthetic more freely, the dog being muzzled. A dessertspoonful, or tablespoonful, should be poured on a napkin, and held tightly over the dog's nose. This quantity should be repeated every few minutes until the dog is insensible.

¹ According to the size of the dog. See p. 81.

Another good way of giving chloroform, or the compound mixture mentioned, when a proper apparatus is not at hand, is out of a round tin canister, perforated round the sides to allow plenty of air to be mixed with the chloroform. At the bottom of the canister a piece of sponge or lint should be fixed, on which the chloroform



A Simple Way of giving Chloroform.

Cocoa, coffee, or other cans with holes punched round and tied over muzzle. A—Hole in the upper part of can to pour anæsthetic.

Take great care that there are no jagged edges to the holes punched in can or on the edge of can itself.

should be poured. More of the anæsthetic as required may be syringed through one of the lower holes. The tin can be fastened on the nose by tapes, which should be passed behind the ears and tied.

Cocaine, a Substitute for Chloroform: Cocaine is an alkaloid extracted from the leaves of the *Erythroxylon Coca*, which grows as a kind of shrub in Bolivia and Peru.

The hydrochlorate of cocaine is the preparation mostly used, as it is more soluble in water.

Together with cocaine read "Waite's Anæsthetic," which, in some respects, is the better: it is to be obtained in small ampules of 1 c.c. and can be used with impunity on small puppies and old dogs, which is not always the case with cocaine.

Cocaine is equal in its effects to chloroform for many operations where the parts to be removed are not very deep-seated; and its use is much more economical, as not only is the drug itself less expensive, but when operating it is not necessary to have a separate attendant to administer it, as is the case when chloroform is given. Also it is much more easily given (by a hypodermic syringe), and the dog does not resist it at all; whereas chloroform is resisted by the patient with all its strength. In some cases three or four assistants are required to hold a big dog whilst it is being administered, and I have known some dogs struggle so violently against taking chloroform that one has been obliged to discontinue giving it, for to have persevered would have endangered the dog's life. This alone is sufficient reason to make cocaine a more favourable anæsthetic than chloroform.

Again, as to danger, there is no comparison between the two. I have only once had any bad results from the use of cocaine; but with chloroform, sometimes, in spite of every care and precaution, the dog will, when under its influence, suddenly collapse. Besides, when a dog, in such a case as I have just described, struggles very much against receiving the chloroform, it takes longer to get him under the influence of the drug than one taking it quietly; and then, often as a consequence, the dog at last becomes exhausted, and if the chloroform is persevered with, it takes too strong effect—the heart's action becomes weak, the breathing heavy, and collapse may occur: the result is, one is obliged to leave off the operation to administer restoratives to save the patient's life.

In many operations, as the excising of tumours (even large ones, weighing six or seven pounds), removing thorns from the eye, sewing and dressing painful wounds, cocaine is equal to chloroform in its effects, for it completely deadens for a time the parts to which it is applied, though the animal retains complete consciousness.

It is particularly valuable when removing mammary growths, so frequently seen in bitches. On many occasions I have removed a growth of this kind weighing, in some instances, seven to eight pounds, without subjecting the dog to the least pain; and the application of cocaine or "Waite's Anæsthetic" does not in any way retard the healing process.

Cocaine for most purposes is best used dissolved in distilled water; the quantity of the solution required depends upon the size of the growth that is going to be removed. For small tumours, say the size of a large walnut, a four per cent. solution is generally sufficient. Of this about twelve minims should be injected under the skin, say three drops at each corner of the growth, and in the course of about ten minutes the parts will be completely insensible to pain and ready for operation. The same strength of solution is also enough for eye operations, including the removal of growths on or under the haw. In such cases the solution of cocaine must be dropped into the eye. About five or six drops are all that is required, one drop to be placed into the eye every minute until the quantity required is given; then wait ten minutes for the cocaine to take effect. In cases of operation for inverted eyelid, the use of cocaine or "Waite's Anæsthetic" is invaluable.

When removing large growths, a five per cent. solution is necessary, giving the same quantity—about twelve minims—injecting one minim just under the skin all around the tumour, and where the skin is going to be cut.

There are other local anæsthetics, as eucaïne, which is said to be safer than cocaine; but it is not nearly so good, at any rate with dogs, and the latter is perfectly safe when used in proper doses.

Eucaïne is also used in conjunction with adrenalin, which has a wonderful power of preventing and stopping bleeding; but when injected under the skin previous to

an operation, the wound does not heal so readily, in consequence of the bloodless condition of the skin, which continues for some time after, owing to the application of this drug. "Waite's Anæsthetic" is safe for puppies or very aged dogs, while cocaine will sometimes do them harm or cause collapse after its use.¹

ANAL GLANDS, Congestion and Irritation of :

Symptoms: Dragging themselves along the ground, which is often supposed to be due to worms, frequently licking the anus, suddenly looking round behind and tucking the tail in as if something were pricking. In these cases the symptoms are often caused by the engorgement of the anal glands; there is a small swelling on each side of the anus due to an accumulation of the natural secretion of these glands. Occasionally a painful abscess forms.

Treatment: In simple cases all that is required is to squeeze the glands and evacuate the contents, and this, as a rule, gives immediate relief. In some dogs these glands require attention every three or four weeks. If an abscess forms, the swelling should be fomented with hot water, and when soft freely opened, the contents evacuated, and the cavity syringed out with a warm saturated solution of boracic acid. The wound should be kept open for a few days. In troublesome cases it is best to have the glands removed altogether by operation, and so save further inconvenience to the dog.

ANEURISM :

Symptom: Dilation of an artery. Difficult to detect in a dog, and difficult to treat.

Treatment consists in ligaturing the artery above and below the aneurism and removing it; this can only be done in small arteries and when on the surface; otherwise complete rest; prevention of exertion may avoid rupture and defer the evil day.

¹ Anæsthetic by Rectal Injection. See p. 324.

ANGINA PECTORIS :

Symptoms: Acute pain in chest over heart, fainting, pallid tongue, difficult breathing, limbs feel very cold. A grave condition.

Treatment: Hold to nose, on a piece of blotting-paper doubled in shape of a funnel, from one¹ to five minims of nitrite amyl. Repeat in half an hour if necessary, or oftener if attack is severe; chloroform may be administered by surgeon. One or two drops of tincture digitalis in teaspoonful or tablespoonful water two or three times a day, according to size of dog. Complete rest and quiet; moderate amount of food of a light kind.

Diet: For a day or so after attack feed on Brand's beef or chicken essence and Benger's food with milk. After a day or two put patient on a raw meat diet, which continue for some time.

ANTHRAX : Uncommon disease in the dog. It can be communicated to man and is just as fatal. If suspected call in a veterinary surgeon at once. All discharges must be burned immediately. If proved by microscopic examination to be anthrax the dog should be destroyed, body and bedding, etc., burned, and room or kennel disinfected with formalin candles.

Symptoms: A carbuncular swelling, commencing as a pimple, accompanied by high temperature. Disease runs a quick course and is generally fatal. Young dogs are extremely susceptible; older dogs, although not immune, do not appear to contract the disease so easily. Usually caused by eating meat containing anthrax germs, hence the mouth and throat show the lesions, and the intestines are affected.

ANTIDOTES : See POISONS.

ANUS, Prolapsus of : A complaint often seen in young puppies, though it may occur in full-grown dogs.

¹ According to the size of the dog See p. 81.

It is generally the result of straining caused by diarrhœa, constipation, debility.

Symptoms: The lower bowel or rectum protrudes for an inch or more from the body, which, if not relieved, becomes inflamed and swollen, and the patient is constantly straining.

Treatment: Return the protruding part as quickly as possible. This is best done by holding the dog up by the hind legs, and then after vaselining the part, applying firm pressure with the fingers, and the prolapsus will slip in. This is very simple and easy, but the difficulty is to keep it in. There are several ways of trying to do this, but first of all give a small enema, from one¹ to four teaspoonfuls of thick boiled starch, with from five¹ to twenty drops of laudanum to stop the straining. In a recent case this may have the desired effect, and the prolapsus not return; if it does, then it must be put back as before, and to keep the bowel in, a couple of strong sutures should be placed through the anus, one from above downward, and the other crossways, or what is called a purse-string suture may be inserted. Another way is by inserting and fixing in the bowel by means of tapes the lower insertion portion of an enema tube; the tapes should be passed across the outside of the thighs, then crossed under the belly and tied over the back. But often, in spite of every care and treatment, the dog will keep straining and force the bowel out time after time. In such cases, the only thing to do is to remove the prolapsus by operation. This operation requires a considerable amount of care, or fatal hæmorrhage may occur, or the peritoneal cavity may be opened and peritonitis set up; and it should be done by a veterinary surgeon under a general anæsthetic. Avoid constipation; give limited diet, Bengers' food made with milk, which will not be commenced for at least twenty-four hours

¹ According to the size of the dog. See p. 81.

after the replacement, then little and often. Watch case for three or four weeks and use only very mild laxatives, such as olive oil, if necessary.

ANUS, Fissure : A small, painful crack or ulcer situated just within the anus and seldom involving more than the mucous membrane.

Symptoms: May only give pain during and after passing a motion, which may show blood or pus. Evert margins of anus and on cleansing part with warm water the trouble will be found; the introduction of a vaselined finger usually causes great pain. If the fissure implicates the sphincter muscle of the anus it may be tedious, otherwise treat with chinosol lotion 1 in 1000 and use boracic ointment afterwards twice a day. If it requires surgical interference call in veterinary surgeon.

ANUS, Fistula : These require a veterinary surgeon's attention.

APOPLEXY :

Symptoms: Generally affects old dogs, and then is most often due to thickening or degeneration of the cranial arteries. It may be due, especially in younger animals, to injury (traumatism); if the injury is to the head, neck or fore-quarters, then those parts show the loss of power; if in the loins the hind-quarters and legs are affected and these legs are dragged behind him. Sudden falling to the ground, convulsions, loss of consciousness. Tongue generally turns dark in colour, eyes prominent and congested. May be in an unconscious state for some time. Paralysis to a greater or less extent may follow. Sometimes the head is only held on one side from muscles of neck being paralysed: blindness may result.

Treatment: Free purge from one ¹ teaspoonful to four tablespoonfuls castor oil, mixed with half the quantity of syrup buckthorn. Put dog in hot bath and apply ice

¹ According to the size of the dog. See p. 81.

to head. If convulsions are severe, give bromide of potassium and hydrated chloral. From two grains to one scruple of the former, and half the quantity of the latter, with water. Repeat every three or four hours until convulsions cease. Do not attempt to force anything down the dog's throat whilst in convulsions or unconscious, and if this continues some time, give double dose of the medicines by enema, with two tablespoonfuls of warm water. If bladder is paralysed it should, if possible, be emptied by pressure; flat hand on both sides with gradual pressure of finger-tips on bladder; if this is not successful then by catheter. Empty the bowel by enemata warm oil blood-heat. Potassium iodide in quantities as prescribed by surgeon, frequent hot fomentations to spine, electrical massage, and for loss of power homœopathic nux vomica 3 x trituration five to ten grain powders three times a day; this will not be used until the active symptoms are well under control.

Diet: Liquid food, milk with bread or Sanatogen, and light soup with bread or toast. Benger's food made with milk.

APPENDICITIS : This disease does not occur in dogs as there is no appendix to the cæcum—but they do occasionally suffer from inflammation of the cæcum.

Symptoms: Tenderness or pain over the seat of the cæcum, which is about the centre of the abdomen; vomiting and diarrhœa, or even dysentery; sometimes bowels constipated. Temperature often rises two or three degrees. Loss of appetite. In some cases the cæcum may be easily felt, and is generally hard and swollen when inflamed. Then give from one to four drops of tincture aconite in teaspoonful or dessertspoonful water three times a day.

Treatment: Rest and free administration of laudanum, from two ¹ to fifteen drops, given in water every four or

¹ According to the size of the dog. See p. 81.

six hours; if in pain also hot compresses on abdomen. Hard wiry pulse in these cases.

In cases due to the impaction of some small foreign body or bodies in the cæcum, which may be detected by means of the Röntgen rays, an operation is necessary.

The cæcum may be removed with a fair amount of safety.

APPETITE, Want of :

Treatment: Avoid constipation; if that is present give from a teaspoonful to tablespoonful castor oil. When not the result of actual disease, but to want of tone of stomach, often seen in delicate dogs, try following mixture:—

Recipe:

Bicarbonate Soda	.	12 grains to 1 drachm. ¹
Spirits of Nitre	.	1 to 4 drachms.
Tincture Nux Vomica	.	6 minims to $\frac{1}{2}$ a drachm.
Water to	.	$1\frac{1}{2}$ to 6 ounces.

Or homœopathic nux vomica 3 x trituration five grains, two or three times a day.

Dose: One teaspoonful to a tablespoonful¹ three times a day one hour before food. Try a change of food, as raw meat. For little dogs, grilled chicken's liver or kidneys, with stale bread-crumbs; also stewed rabbit without any bones.

APPETITE, Morbid :

Symptoms: Picking up and eating all kinds of rubbish and filth, stones, coal, and when out in the streets, horse dung, etc.

Treatment: Always give worm medicine in these cases. Dust over anything you know the dog will pick up with some cayenne pepper. In many cases one is obliged to resort to a muzzle, covered at end with coarse canvas, and make the dog wear one when out. Very often when this

¹ According to the size of the dog. See p. 81.

is persisted in for some weeks, the dog gets out of the habit. Also stomach tonic as in previous paragraph—homœopathic nux vomica 3 x trituration.

ARTHRITIS: Inflammation of a joint, or disease involving a joint; more strictly, articular inflammation. It may be traumatic (due to injury), rheumatic, suppurative or tubercular. It occurs as acute and chronic.

Symptoms: The joint is swollen and very painful; dog is very lame, and in some cases unable to put the foot to the ground.

Treatment: During acute inflammation rest and warmth is necessary, soothing remedies should be applied, hot poppy-head tea fomentations, or the following lotion for simple cases of the rheumatoid type:—

Recipe:

Laudanum	2 drachms.
Goulard's Extract of Lead	1 drachm.
Water to	6 ounces.

A piece of lint, large enough to cover and go round the joint, should be saturated with the lotion and applied. This should be covered entirely over with a piece of oil silk, and a bandage applied to keep dressing in place. Change the dressing three times a day, or Thermogen wool sprinkled with spirit can be applied.

A dose or two of aperient medicine should be given.

Internal Treatment: Tabloids salicylate soda from two to ten grains three times a day, alkaline lithia water to drink if patient will take it. When acute inflammation has ceased, methodic massage and violet ray treatment in moderation and under advice.

ARTIFICIAL EYES, TEETH, AND LIMBS:

Can be made and used for canine patients.

Limbs are often used and not often objected to by dogs; cork, leather, and wood are usually employed.

Eyes, if properly fitted, are not often objected to and improve a dog's appearance.

Teeth are always objected to and are difficult to fit and keep in position. If a dog's comfort is studied teeth would never be put in; their gums get extremely hard and useful.

ASPHYXIA :

Symptom: Interruption to breathing, from drowning and other causes.

Treatment: Dash hot and cold water alternately over the head, and inject stimulants, as ether or brandy, under skin—from ten ¹ to twenty drops of either.

Artificial Respiration: When the condition is due to partial drowning, hold the dog up, with his head downwards for a minute that the water may escape from the lungs, then place the dog on his back, draw the tongue out, and with the hand placed on the lower part of the chest—that is just where the chest and abdomen join—press downwards and forwards with some little force, then suddenly raise the hand to allow the chest to expand. This should be repeated every three or four seconds. Do not attempt to make the dog swallow whilst in an unconscious state. For cases due to accidents during administration of an anæsthetic, in addition to the foregoing strong ammonia may be *intermittently* applied to the nostrils—a few drops on cotton wool—but must not touch the skin. *See also* RESPIRATION (ARTIFICIAL).

ASTHMA : Is a difficulty in expiratory breathing, which most often is of sudden occurrence. This difficulty is due to a diminished calibre of the smaller bronchial tubes; this in turn is controlled by certain nerve supplies. Many cases are complicated by bronchitis and are largely influenced by the condition of the heart, and so may be termed bronchial asthma or cardiac asthma. In the dog there is usually a complication of one or both of these. Often hereditary.

Symptoms: Heavy and difficult breathing, often a

¹ According to the size of the dog. See p. 81.

troublesome cough, and if the ear is applied to the chest a crackling noise will be heard. Short inspiratory and prolonged expiratory whistling. In frankly spasmodic cases coughing does not occur until near the end of the paroxysm.

Treatment: Aperient medicine should be given, and be repeated once or twice a week. During an attack if the patients do not sit up they should be propped up with pillows as it gives considerable relief. Medicine by the mouth is only given between the attacks. The attacks complicated by bronchitis may be averted by doses of iodide of potash from one to five grains in teaspoonful or dessertspoonful of water three or four times a day.

For relief of paroxysms:—

Recipe:—

Sodium Nitrite	1 gramme.
Tincture of Stramonium	10 grammes.
Fluid Extract of Grendelia	15 grammes.
Glycerine	3 grammes.
Water to	60 grammes.

Teaspoonful doses for *terrier size*, and if one dose does not stay the paroxysm, repeat in an hour until two or three doses have been given.

Recipe:

Liquor Morphia	$\frac{1}{2}$ to 3 drachms. ¹
Hoffman's Spirit	$\frac{1}{2}$ to 3 drachms.
Paregoric	1 to 4 drachms.
Syrup of Squills	2 to 8 drachms.
Water to	$1\frac{1}{2}$ to 6 ounces.

Doses: One teaspoonful to a tablespoonful three or four times a day, or from ten drops to a teaspoonful of glyco-heroin in a little water may be given three or four times a day for cough.¹

¹ According to the size of the dog. See p. 81.

When the condition is the result of heart disease, which is often the case, give the following mixture:—

Recipe:

Tincture Digitalis	.	.	20 drops to $1\frac{1}{2}$ drachms. ¹
Tincture Nux Vomica	.	.	12 drops to $1\frac{1}{2}$ drachms.
Compound Sulphuric Ether	.	.	$\frac{1}{2}$ to 3 drachms.
Syrup	.	.	2 drachms to 1 ounce.
Water to	.	.	$1\frac{1}{2}$ to 6 ounces.

Mix.

Doses: From one¹ teaspoonful to one tablespoonful three times a day after food for heart.

Diet: Raw or very tenderly-cooked meat, given in small quantities, three times a day. No other food.

BACK, Injuries to : May be the result of a blow, or due to a sprain when jumping. They often occur as the result of a dog being run over across the back.

Symptoms: Pain on pressure to the part; in bad cases the dog walks with difficulty, and with back arched and tail down. In slight cases, though there may be pain on pressure, the dog walks, when first starting out, fairly well, and seems bright; but after going a short distance he soon lags behind, loses his spirits, and droops his tail. In other instances of a slight nature, the dog is able to walk easily but is unable to jump, and, if he attempts to, he cries out.

Treatment: It consists principally in giving the dog rest. Sometimes several weeks' quiet are necessary, as well as rubbing the back with some anodyne liniment, as the following:—

Recipe: The Liniment:

Chloroform (Meth.)	.	.	.	$\frac{1}{2}$ ounce.
Tincture Hyoscyamus	.	.	.	$\frac{1}{2}$ ounce.
Spirits of Camphor	.	.	.	1 ounce.
Soap Liniment	.	.	.	1 ounce.

Mix.

¹ According to the size of the dog. See p. 81.

Apply with gentle friction once or twice a day to the painful parts. A dose of aperient medicine does good, and whilst the dog is at rest a light diet should be given. X-rays will show if any bones are broken.

BAD BREATH:

Symptoms: May be caused by a diseased condition of teeth, the accumulation of tartar on the teeth, as the result of which ulcers form on the gums and cheeks. Bad breath may also arise from a disordered condition of the stomach, or as a result of eating putrid meat, fish, etc., or of some disease of the lungs, or the membrane lining of nasal passages.

Treatment: Remove the cause. If from scavenging give smart dose of castor oil. If it arises from the condition of the teeth, remove the tartar by scaling, and clean mouth and teeth twice daily, using a small *soft* tooth-brush and the following wash:—

Recipe:

Salol	1 drachm.
Tr. Myrrh	2 drachms.
Spirits of Wine	10 drachms.
Formalin	1 drachm.

Mix.

Half a teaspoonful to be added to half a tumblerful tepid water. If the breath remains offensive after the mouth has been made healthy, give a pill three times a day containing from a quarter¹ to two grains of permanganate of potash, or twice a day give from two to ten grains of salol.¹

When the condition is the result of some disease affecting the lungs, suitable remedies for this must be administered; or if the result of an offensive discharge from the nose, a dessertspoonful to two tablespoonfuls¹ of the following lotion should be syringed up each

¹ According to the size of the dog. See p. 81.

nostril once or twice a day (cover dog's eyes while syringing):—

Recipe:

Chinosol	.	.	.	.	.	8 grains.
Water to	.	.	.	.	.	8 ounces.

Mix in equal parts *warm water*.

BALANITIS (*see also* PENIS, GROWTHS ON): An inflammation of the mucous membrane of the glans penis or the whole of the penis, causing purulent discharges from prepuce; frequently present in young dogs; simple uncleanliness is usually the cause.

Treatment: After thoroughly cleaning prepuce out with tepid water, syringe into sac twice a day from one to four ¹ tablespoonfuls of the following lotion:—

Recipe:

Chinosol	.	.	.	.	.	6 grains.
Water to	.	.	.	.	.	8 ounces.

Mix.

When met with in older and aged dogs the cause is usually at base of penis, which must be thoroughly exposed and cleansed with warm water, when any granulations round the "knot" should be painted with pure tincture of iodine, or if very pronounced in type with solution of silver nitrate, ten grains to the ounce; repeat twice a week. If there are granulomas (soft growths) present these have to be removed; they are contagious and the dog should not be used at stud until the trouble is thoroughly eradicated; they are not of the same origin as ordinary granulations, which are not contagious. If the growths are present in a bitch the stud dog is liable to get infected and vice versa. Hence the supreme necessity for observation and strict cleanliness. Common in bulldogs and bitches.

BALDNESS: *See* ALOPECIA.

¹ According to the size of the dog. See p. 81.

BATHS : May be classified according to treatment, as water, vapour, and air, etc.; according to temperature, as hot, tepid, and cold; and according to the end desired, as nutritional, medicinal, stimulant, etc. Baths may be of almost numberless varieties as prescribed by a qualified practitioner, and the average dog-owner is well advised not to experiment with the unknown.

For ordinary use a tepid bath should register about 60 degs. F., a warm bath 80 degs. F., and a hot bath 101 degs. F., or slightly more. Dogs do not tolerate their bath water as hot as humans. A soothing bath for an irritable and red skin can be made by adding to three gallons of tepid water one ounce of borax, eight tablespoonfuls of fine oatmeal, in which the dog should be immersed for ten or fifteen minutes; repeat two or three times a week. When the dog is dirty he may be cleaned whilst in the bath by rubbing the yolks of three or four eggs into the skin and coat, and then rinsing off with the oatmeal water.

A suitable bath for the treatment of eczema and to destroy insects on the skin may be made by adding three tablespoonfuls of Jeyes' disinfectant fluid to a gallon of tepid water.

Sulphur Bath: A valuable remedy for skin diseases; is made by dissolving one ounce of sulphurated potash in a pail of tepid water, in which the dog may be immersed for ten minutes.

Shampoo: There are many shampoos, both liquid and dry, of a saponaceous nature now on sale, but, given a pure super-fatted soap, it is cheaper and safer to use your own; medicants can be added and used when prescribed.

BED-SORES :

Symptoms: Dogs, after severe illness, that have not been carefully looked after and given a sufficiently thick and soft bed, and when they have become very thin,

often have large, unhealthy-looking, offensive-smelling wounds or ulcers on the hips, points of the buttocks, shoulder, and other parts.

Treatment: Well foment and thoroughly clean parts with a warm saturated solution of boracic acid or Jeyes' fluid diluted sixty times with warm water, two or three times daily. Gently dry and then freely dust over with powdered boracic acid or amyloform powder. Take pressure off wound by encircling it with a ring of thick felt fixed with some adhesive material. In obstinate cases powdered iodoform may be used once or twice to dust (sparingly) over wound instead of boracic powder. When wound is clean and healthy use boracic ointment.

BILIOUSNESS :

Symptoms: Is generally shown by vomiting, thirst, occasionally diarrhœa, refusal of food. In bad cases the skin, eyes, and mouth turn yellowish.

Treatment: First give dose castor oil, say half teaspoonful to two tablespoonfuls,¹ with from two¹ to ten drops of laudanum, or a pill containing from a quarter to two grains of calomel, with one-eighth to one grain of powdered opium. Later, if sickness is persistent, give from three to ten grains of carbonate of bismuth shaken dry on the tongue, or the following mixture may be tried:—

Recipe:

Diluted Hydrocyanic Acid	.	.	.	20 drops.
Liquor Bismuth	.	.	.	1 ounce.
Water to	.	.	.	6 ounces.

From one¹ teaspoonful to a tablespoonful every three or four hours.

To keep strength up give every hour from a quarter¹ to a teaspoonful Brand's beef jelly; allow Vichy water and milk in equal parts to drink—

¹ According to the size of the dog. See p. 81.

no plain water—but the patient may have some ice to lick. When sickness is very persistent, the stomach should be given complete rest for about twelve hours, and the dog's strength kept up during this time with peptonized meat suppositories (Burroughs Wellcome), one being given every four hours. When these cannot be obtained, a warm enema of peptonized milk, two to six ounces, with from five¹ drops to one teaspoonful of brandy, may be given every three hours. Hot linseed meal poultices to the stomach are sometimes useful, or hot swabs wrung out.

BITES: A punctured wound caused by the bite of a dog, if allowed to scab over, without being properly disinfected and treated, usually results in the formation of an abscess; so the cavity should be syringed very thoroughly with pure tincture iodine for the first time, after being properly cleansed of all hair and dirt, and the hair surrounding the mouth of the wound removed. The syringing into the cavity afterwards should be with warm boracic lotion—teaspoonful crystals in tumbler of hot water. The deeper the puncture the more care is required to prevent the mouth of the wound healing before the bottom of the cavity. When not being fomented the wound should be covered over with a piece of lint (once doubled) soaked in a solution of boracic lotion; this should be entirely covered with a piece of oil silk, and a bandage applied. This treatment may be continued until the wound has healed. When the wound consists of a tear of the skin, after thoroughly cleansing the parts with some disinfectant, the hair should be removed from edges of the skin, then the edges of the skin brought together and sewn up—each stitch separate—with medicated silk, which should be sterilized—*e.g.* with a solution of Jeyes' fluid; the wound may be sewn up, a few layers of carbolic gauze laid over the wound, and a bandage

¹ According to the size of the dog. See p. 81.

applied. It is best to renew the dressing daily in these cases, as there is always a danger of suppuration, and if this occurs, two or three stitches should be removed at the lowest part to allow the pus to escape. After an abscess has formed, the parts require keeping very clean, and should be kept covered with carbolic or other gauze. A dog should not be allowed to lick a wound.

BLADDER, Irritable :

Symptoms: Constantly straining to pass water even when indoors; urine high-coloured and often cloudy, strong-smelling. Blood may be mixed with the water, or come in drops after the passing of water. These symptoms must not be confounded with those that result from a cystic calculus (stone), for in these latter cases the dog strains continuously, and if a small calculus happens to pass from the bladder into the passage (urethra), it generally becomes fixed in the canal just behind the bone in the penis, and the dog is unable to micturate at all, or only in drops. When a dog is seen to be frequently straining, he requires careful watching to see the kind of urine passed, or whether any is being passed at all. If none is passed for twenty-four hours take immediate professional advice.

Treatment: If there is much pain, give every three or four hours from two¹ to fifteen drops of tincture of hyoscyamus in water; if there is not much pain, a course of hyposulphite of soda is all that is required, and should be continued for some time.

Dose: From three grains to half a drachm¹ in water, and a careful diet of milk, with bread or Spratt's biscuits, or Force, milk puddings, etc. Milk and barley water may be given to drink. When the irritation is due to calculus prompt surgical assistance is required.

BLADDER, Paralysis of :

Symptoms: The dog at first is unable to pass water,

¹ According to the size of the dog. See p. 81.

later it dribbles from him. May be the result of general paralysis caused by injury to spine, or brain, or to the abdomen; it may also be the result of stone in the bladder.

It sometimes occurs in dogs of very clean habits as the result of being shut up for a long time, and the bladder becomes over distended, and can be felt in the back part of the abdomen as a large ball.

Treatment: Relief of the bladder. If there is no mechanical obstruction as from a stone in the canal, the bladder can be emptied by pressure on the walls of the abdomen over the seat of the bladder. Stand at back of dog and place the flat hand on either side of abdomen, pressing the fingers in towards the anterior part of bladder and applying firm pressure towards the hind-quarters. If this fails, a catheter must be passed.

For size of catheter to be used, see page 40. If there is a small stone or gravel in the passage, there is sometimes difficulty in passing the catheter, but with care a passage may generally be made with a fine grooved silver probe. If no urine can be obtained an operation will be urgently necessary.

When there is an absence of mechanical obstruction and inflammation in these cases, to improve the tone of the bladder give from one to four¹ minims of tincture nux vomica three times a day, in water and after food. In chronic cases iron (ammoniated citrate) may be added to the medicine. Nux vomica must not be given when there are any signs of convulsions.

BLEEDING, From Stomach: This may be caused by great straining during vomiting, foreign body in stomach, inflammatory condition of stomach due to injury.

If the condition is due to stones or other solid body being swallowed it should be discovered by placing

¹ According to the size of the dog. See p. 81.

fingers on either side of stomach, which is high up behind the ribs; X-ray will reveal bone, stone, or metal.

Symptoms: Vomiting of blood, sometimes of a bright red colour, at other times dark red or venous blood; when it has been retained in the stomach some time, its colour is more like coffee.

Treatment: Give the following mixture to relieve the symptoms:—

Recipe:

Tincture Thalاسpi	.	.	.	24 drops.
Liquor Bismuth	.	.	.	$\frac{1}{2}$ ounce.
Water to	.	.	.	3 ounces.

Doses: One teaspoonful to a tablespoonful¹ every three or four hours.

Diet: Milk, also Benger's food with milk, Kreochyle or Valentine's meat juice with Vichy water. Brand's essence and milk, either peptonized or plain, is the best food. When sickness is very severe, stomach should be rested for twenty-four hours, and the dog fed with nutritive enema, say from one¹ to four tablespoonfuls peptonized milk every three hours alternately, with a beef suppository (B.W.). These may be purchased in different sizes.

Bleeding from stomach may also be a symptom of ordinary or specific gastritis. (*See those articles.*)

BLISTERS: Collection of blood, water, or serum under first skin; result of a burn as a rule.

Treatment: Cut blister, squeeze out contents, apply boracic ointment on lint, and bandage.

BLISTERS, To Apply: It is somewhat difficult to raise a good blister on a dog—much more so than on a horse, or even a human being; but a fluid called Liquor Epipasticus will do so if properly applied. The hair should at first be cut off closely from the part where it is intended to apply the blister; the skin should be

¹ According to the size of the dog. See p. 81.

then thoroughly washed with warm water and soap, and afterwards well dried. Then the blister should be rubbed on for about five minutes with a piece of wool tied around a stick. The person applying the blister should be careful not to get any of it on his fingers or under the fingernails, as it may make them very sore. Over the blister put a piece of either grease-proof paper or brown paper, and apply a bandage. This blister is very poisonous, and the dog must not be allowed to lick it on any account. The next day, if the skin is not well blistered, rub in for two or three minutes a little red blister ointment and bandage again. Forty-eight hours after the first application of the blister it may be washed off, the parts carefully dried with a soft cloth, and then anointed with boracic ointment.

BLOOD POISONING: *See* SEPTICÆMIA AND PÆEMIA.

BOILS (Furuncle): Small red swellings which suppurate and break, due to the introduction of specific microbes into the sebaceous hair follicles. Conditions which favour development are impoverished health, uncleanliness, presence of worms, weakness after disease. Situated, as a rule, on inside of thighs, arms, and belly, but may appear all over dog. Sometimes seen in cases of distemper; also seen in young puppies, especially on inside of thighs and belly, when suffering from worms, which should have prompt treatment. When forming, paint with tincture iodine.

Treatment: Single boils should be opened as soon as they show signs of suppurating, and contents evacuated. When the core is completely removed, the following ointment should be introduced into the wound:—

Recipe:

Sublimed Sulphur . . .	150 grains.
Pulverized Camphor . . .	150 grains.
Glycerine . . .	Enough to mix the above.

And give the patient twice a day a capsule containing:—

Recipe:

Sublimed Sulphur	.	.	.	1 grain.
Pulverized Camphor	.	.	.	$\frac{1}{8}$ th grain.

The above for dog terrier size (adult).

Apply over affected parts hot boric compresses and repeat two or three times a day with the ointment and compresses. Yeast is also good in some cases; teaspoonful to tablespoonful before meals twice a day. Outdoor exercise, change of air, good nourishing food.

BOWELS, Inflammation of, Colic (*See also COLIC*):

Symptoms: Pain in abdomen; patient restless, and, if a puppy, whines and cries; generally diarrhœa, and quantity mucus passed; may be constipation; vomiting a frequent symptom. Seldom a rise of temperature unless case very acute, though the pulse is often much quickened. Often caused by worms and indigestion, and may be result of chill.

Treatment: As a rule, a dose of castor oil, say half a teaspoonful¹ to two or more tablespoonfuls, with from two¹ to fifteen drops of laudanum, is the best treatment at first. After this has worked off, if pain continues, give following mixture:—

Recipe:

Laudanum	.	.	.	.	1 drachm.
Chloric Ether	.	.	.	.	2 drachms.
Liquor Bismuth	.	.	.	.	4 drachms.
Water to	.	.	.	.	3 ounces.

Dose: One¹ teaspoonful to a tablespoonful every two, three, or four hours until pain relieved. Apply hot salt bags or hot bran bags (which are lighter for weak dogs) continuously to belly. Later, worms should be removed by suitable remedies. (See p. 312, Worms).

¹ According to the size of the dog. See p. 81.

BOWELS, Intussusception of :

Symptoms: This is a disease that more often attacks young puppies than adult dogs. It may be caused by worms; it also results from eating coal, stones, and other hard substances, and may be due to colic as a result of indigestion. The pain is very acute, the dog constantly crying and whining. During the early stages there may be vomiting; there is also diarrhœa, and the passing of mucus tinged with blood. If the abdomen be manipulated with the fingers, a long hard swelling will be felt, due to one portion of the bowel telescoping into another.

Treatment: Give fairly large doses of laudanum, say for a fox-terrier puppy two or three months old, five drops every four hours with a dessertspoonful of water. Give nothing but liquid food as milk or Renger's food, or beef tea. If no better in twenty-four hours, the puppy should be relieved by operation. If the operation is postponed too long, it is as a rule not successful, but when done during the early stages there is every chance of effecting a cure, and giving the puppy immediate relief. Besides, the operation, when done early, is much easier, for then, as a rule, the intussusception can be reduced by pulling on the bowel.

After such an operation no food should be given for twenty-four hours; and then liquids only for a few days. Absolute quiet and rest.

BREAST, Inflammation of : (Mammary Glands) :

Symptoms: Gland is swollen hard, red and very painful. There is a rise of temperature which shows pus is forming. After two or three days the swelling becomes softer, points, and breaks and freely discharges.

Treatment: Hot poppy-head fomentations, and the application of hot linseed meal poultices frequently changed. Lance abscess directly soft. Give aperient

medicine. Sometimes it is necessary to remove puppies, when milk should be drawn off two or three times a day.

BREATHING, Difficulty in Bulldogs :

Causes: Short nose, elongated soft palate, malformation of the wings of the nostrils.

Many bulldogs, especially those with a very short neck and face, have a chronic difficulty in breathing. Each inspiration is performed with an effort, the sides heaving, and the dog is constantly bringing up quantities of white frothy mucus, especially when first let out.

In some instances, especially of French bulldogs, the inspirations are so difficult that if a dog gets much excited it may fall over partly asphyxiated. In these cases the heart is always weak, and digitalis should be given, one to four drops in a little water two or three times a day.

Treatment: The principal thing to do in these cases is to give a diet composed entirely of raw meat, cut up in small pieces, given three times a day, so as not to overload the stomach at any time. Also after each meal give from one¹ to seven drops of tincture nux vomica, according to the size of the dog, in a little water, immediately after food, or for a change, from three¹ to six grains of lacto-peptin.

For the malformed nostril where the wings are pressed in almost closing the entrance to the nose, an operation will give great relief; it consists in removing as much of the skin as necessary behind the top of the nostrils by an oval incision from before to behind, then drawing the two edges of the oval space together with two or three sutures, which will draw out the wings of the nostrils to their normal position.

In some cases I have attempted to relieve these distressing symptoms by an operation, that is by removing part or the whole of the false palate, but it has not been altogether a success, though I have sometimes thought

¹ According to the size of the dog. See p. 81.

it has given some relief. Of course an operation of this kind must be done under the influence of chloroform. Watch for excessive bleeding after, and only give milk foods for few days afterwards.

BRONCHITIS: Catarrhal inflammation of bronchial mucous membrane; occurs in acute and chronic form.

Causes: Infection, exposure to cold and wet, draughts, especially after being in warm house or after hard exercise. May occur with or after distemper.

Symptoms (Acute): Rise in temperature; patient dull and listless; if temperature is high, rigors and shivering appear; at first the cough is slight, then more severe and frequent; wheezing and difficult breathing; phlegm accumulates first in the large tubes, then in the smaller. In bad cases, dog unable to lie down; should be propped up.

Treatment: For the temperature and as expectorant give the following for fox-terrier size:—

Recipe:

Potash Acetate		1 ounce.
Spirits Ether Nit.		3 drachms.
Liquor Ammon. Acetate		1 ounce.
Ipecacuanha Wine		4 drachms.
Compound Liquorice Mixture		3 ounces.

Half to a teaspoonful every two or three hours.

Place in fairly warm room, and keep a kettle going to moisten air (steam may be medicated). When breathing very difficult and the throat seems full of phlegm, give an emetic: one-quarter to one teaspoonful ipecacuanha wine, or

Recipe:

Hydrochlorate of Apomorphia		$\frac{1}{2}$ grain.
Water to		1 ounce.

Dose: Half¹ to two teaspoonfuls; repeat in one hour

¹ According to the size of the dog. See p. 81.

if it has not caused vomiting. When sickness stops, commence following mixture:—

Recipe:

Liq. Morphia	1	drachm.
Hoffmann's Spirits	2	drachms.
Paregoric	1½	drachms.
Ipecacuanha Wine	1	drachm.
Syrup of Squills	1	ounce.
Water to	3	ounces.

Dose: One teaspoonful to a tablespoonful¹ every four or six hours. Apply hot linseed meal poultices to throat and front of chest. Give aperient medicine. The emetic, if the cough and breathing remain bad, may be repeated in two days. When the active symptoms have passed and the cough is better, petroleum emulsion may be given. During early stages light diet should be given; later meat. Avoid constipation.

BRONCHITIS (Chronic): Sometimes called "Husk". Must not be confounded with the contagious form of laryngitis, which is also called "Husk". (See LARYNX (INFLAMMATION OF)).

Symptoms: Though the dog may appear very well, with good appetite, there is a frequent dry, hard cough, which is generally worse at night and early morning, but any exertion or excitement induces a fit of coughing. After each attack, the dog retches as if he had something in his throat, and was going to vomit.

The cough is much more continuous and the matter which is coughed up more tenacious. Dogs do not actually spit owing to the formation of their mouth, lips, and cheeks. Therefore the heart has to be carefully considered, loosening remedies and medicated inhalations given as follows:—

Recipe:

Tinct. Benzoin Co. . . .	1	drachm (or Creosote as a change).
Boiling water	1	pint.

¹ According to the size of the dog. See p. 81.

In basin under cane-seated chair. Dog placed on chair, and dust-sheet thrown over chair should touch floor. Keep dog in extemporized vapour bath five minutes; repeat as required.

Treatment: Give aperient medicine occasionally, and the following mixture:—

Recipe:

Tinct. Nux Vomica	.	.	24 drops.
Ipecacuanha Wine	.	.	1 drachm.
Water to	.	.	3 ounces.

Doses: One teaspoonful to a tablespoonful¹ three times a day. When cough is very troublesome give a dose of the mixture recommended for acute bronchitis at night, or from fifteen¹ drops to one teaspoonful of Smith's glyco-heroin in a little water.

When heart needs a stimulant, from five drops to tablespoonful brandy—according to age and size of dog—with warm water, or in food if taken in that way.

Diet: The diet in these cases is very important, and underdone meat is the best possible food, as it nourishes the dog well without distending the stomach or causing undue pressure.

BRUISES:

Symptoms: Discoloration of the skin from effusion of blood the result of injury.

Treatment: Apply following lotion frequently:—

Recipe:

Goulard's Extract Lead	.	.	1 drachm.
Liquor Opium	.	.	1 drachm.
Distilled Water to	.	.	8 ounces.

When in a suitable part, so that a bandage may be applied, the lotion is more efficacious if applied on lint, which should be covered over with a piece oil silk, and

¹ According to the size of the dog. See p. 81.

then a bandage or tincture calendula compress (1 in 30) applied as before mentioned.

Give aperient medicine, and keep dog at rest for a few days.

BURNS :

Symptoms: The skin may be scorched and the coat frizzled, but the roots not destroyed; or the skin may be destroyed and a large blister formed, which sooner or later suppurates. Burns which are the result of boiling water are practically as severe as those of fire, for in either case the hair never grows afterwards. Burns on the chest and abdomen are more serious than others when severe in any situation, and are not very hopeful; the results mean protracted nursing and slow healing, with considerable discomfort and pain for the patient. When any considerable surface of the body is implicated there is serious shock and little hope of recovery.

Treatment: When the skin only is scorched, apply lime water and linseed oil (carron oil). One part of the former, mixed with two parts of the latter, should be dabbed on two or three times a day. In severe burns the part may be smeared over with boracic ointment and when the blister has broken the same ointment should be applied on lint, which must be kept in its place with a bandage or coat. Repeat dressing two or three times a day. Heart will require careful consideration in serious burns.

CALCULI (Stones in the Kidney) :

Symptoms: Blood, and also in many cases pus, is passed with the urine. The dog at times seems very ill; the temperature may go up to 103 or 104. Pain on pressure over the loins, sickness, loss of condition, and great wasting in long-standing trouble. In severe cases there is collapse, and death follows as the result of uræmia poisoning.

Treatment: Open the bowels freely. Apply hot fomen-

tations or poultices to the loins, and give following medicine:—

Recipe:

Bicarbonate of Potash . . .	1 drachm.
Boro-citrate of Magnesia . .	1 ounce.
Mix.	

Give from sufficient to cover a sixpence to a teaspoonful,¹ two or three times a day, mixed with food or milk.

Diet: Give plenty of milk mixed with equal parts Vichy water or Contrexéville water. Also Benger's food with milk, tripe, and fresh boiled fish, with well-cooked rice. Avoid red meat. X-rays will reveal stones, which should be removed by operation unless extremely minute.

CALCULI IN BLADDER: Vary in size, shape, consistency, and number, so much so that in many cases they resemble sand; but in one case of a retriever I removed a stone weighing—in the recent state—22 ounces, as large as a turkey's egg and same shape.—F. W. C.

Symptoms: In the dog the stones are generally small, varying in size from a millet seed to a pea, though occasionally a large one is found. In bitches the stone is generally not discovered until it has become a good size, and set up irritation of the bladder. In the dog, when the stones are small they, as a rule, do not seem to do any harm or cause inconvenience until one or more escape from the bladder, pass into the urinary passage or urethra, and become lodged in the canal just behind the bone in the penis where the passage is smallest. If the stone is quite round—which, fortunately, is not always the case—it acts like a cork in a bottle, and the dog is unable to pass any water. He stands or stoops like a bitch, and keeps straining; but nothing comes away, except, perhaps, occasionally a single drop of blood-stained urine. If the stone happens to be not quite round, then he is able to pass a small quantity of

¹ According to the size of the dog. See p. 81.

highly-coloured water by great effort. To ascertain for certain if these symptoms are the result of gravel or stone, a small sound or catheter, well vaselined, should be passed; and if there is any blockage in the passage it is easily ascertained, for in that case it will be impossible to pass the instrument for more than a few inches instead of from 6 to 24 inches, according to the size of the dog; and besides, the hard piece of gravel or small stone will be felt. In some cases when the stone is not quite round the instrument will pass to the side of it, and then one can easily feel the grating of the stone against the instrument as it passes, more especially as it is withdrawn.

Treatment: Medicines are of little use, though a sedative like hyoscyamus will sometimes relieve the spasm of the parts, and enable the patient to pass a little water when the passage is not completely blocked; when it is, the stone may sometimes be pushed back to where the passage is larger, thus enabling the dog to relieve himself; but in all these cases arrangements should be immediately made for *an operation, which is the only cure.*

In a bitch the symptoms of a calculus in the bladder are somewhat similar to those shown by the male: she is constantly straining to micturate, even after the bladder is emptied of water; the urine is high-coloured and smells strong, and often a few drops of blood are passed at the end of micturition, or the water may be blood-stained. I invariably operate by way of abdominal section and then opening bladder.

Treatment: Operation. Dogs once suffering from calculi are always liable to a recurrence. This may sometimes be prevented by giving a long intermittent course of the following preventive treatment:—

Recipe:

Bicarbonate of Potash . . .	2 drachms.
Boro-citrate of Magnesia . .	2 ounces.
Mix.	

Doses: From sufficient to cover a sixpence to one teaspoonful¹ twice a day with food or given in water, and continued for a long time. Avoid meat as much as possible with the food.

Or "Piperazine", half human dose (a long intermittent course). Vichy or Contrexéville water to drink.

CANCER: *See also* TUMOURS.

Symptoms: A malignant tumour which usually becomes ulcerative, especially when situated on or near the surface of the body, emitting an offensive-smelling discharge mixed with blood. The animal loses condition and becomes very weak. A cancer may form anywhere, but the parts most frequently affected are: the mouth, inside of the throat, milk glands, and the organs in the abdomen, and round the anus and in the rectum.

Treatment: An early operation is the only chance of effecting a cure; once degeneration of tissue or supuration has commenced, the case is practically hopeless.

Modern treatment for early cases by the expert use of radium has been followed by very promising results. The removal, by operation, of fibroid tumours which have not arrived at the malignant stage is advisable; it avoids many fatal troubles, and in the vast majority of cases prevents that which one most fears; this particularly applies to mammary tumours.

CARIES: A chronic inflammation of bone with absorption of bony tissue and ultimate process of ulceration of bone. Caries = *molecular death* of bone. Necrosis = *death of bone en masse*.

Cause: Generally result of some injury, but may result from microbic invasion, tubercle, cancer, actinomycosis, etc. Abscesses form, resulting in unhealthily discharging wounds which are difficult to heal. If the parts be probed, roughened exposed bone may generally

¹ According to the size of the dog. See p. 81.

be felt, which after a time separates from the healthy structure and escapes with the discharge.

Treatment: These cases must always be given time for the dead bone to separate from the healthy bone. Hot linseed meal poultice, dusted freely over with powdered charcoal, should be applied, and repeated two or three times a day, and as soon as the dead structure is loose, the wound, if not large enough, should be dilated with a knife and the dead bone removed. If this is successfully done, the wound generally heals quickly. In some cases when a limb is affected, and the inflammation has been very extensive, amputation may be necessary. Dogs do very well with three legs, but artificial limbs can be adjusted in the majority of cases with advantage to the dog.

If after the dead bone has been removed the wound does not heal, syringe into it every other day about half an ounce of tincture calendula (1 in 30), and apply boracic ointment on lint, or pack part where bone has been removed with iodoform gauze, and bandage. Wounds in cases of caries require keeping very clean with some disinfectant, as a saturated solution of boracic acid, or a solution of Jeyes' fluid; Condy's fluid is also useful.

CATARACT: A pathologic change in the lens or its capsule, diminishing its transparency; it does not cause pain; there is more or less disturbance of vision according to amount of opacity present. The lens is composed of an inner nucleus surrounded by a capsule, and any part of these structures may be affected.

Cause: Often caused by injury (traumatic); may be hereditary; disease of the eye which interferes with nutrition of lens.

Symptoms: The formation of an opaque spot or patch on the lens. In young dogs, when it occurs, which is not often, the whole pupil seems to be involved at once,

but in old dogs, in which it is much more common, it generally commences as a small speck, and gradually increases. The cornea or front of the eye generally remains clear. Of course there is loss of vision of the affected eye to a greater or less extent, according to the size and density of the cataract.

Treatment: The following drops improve the sight when the cataract does not affect the whole pupil:—

Recipe:

Sol. Sulphate of Atropine	.	.	10 drops.
Sulphate Zinc	.	.	$\frac{1}{4}$ grain.
Distilled Water to	.	.	1 ounce.

Two drops on eyeball two or three times a day.

Operation, except for improving the appearance of the eye, is not very satisfactory in the dog, as wearing of spectacles to take place of lens is impracticable. And yet if the removal of the lens is successful without disturbance of iris and the optic nerve and retina are in a normal healthy condition, the dog may regain a considerable amount of vision *after some weeks*. As an early treatment in the *initial* stages of cataract and some other opacities of the eye, the use of an American remedy (Succus Cineraris Maritima Comp., Walker Pharmaceutical Co., St. Louis, Minnesota, U.S.A.) has proved very successful, and I have used it myself with most gratifying results.—F. W. C.

CATARRH OF THE NOSE (Rhinitis) :

Cause: Exposure to cold and wet, careless washing, inhalation of dust or chemicals, introduction of foreign bodies as grass seeds, etc., etc.

Symptoms: Shivering and sneezing, thin mucous discharge from nose, which is not sticky at first, as in distemper; watery discharge from eyes; a husky cough may appear. The dog is dull for a few days, and perhaps off his food, but as a rule there is no rise of temperature

as in distemper, and the teeth do not become discoloured as in the latter disease.

Treatment: Keep quiet in a dry, warm room for a few days, and give the following mixture:—

Recipe:

Tinct. Aconite . . .	24 drops.
Spirits of Nitre . . .	2 drachms.
Concentrated Solution of Acetate of Ammonia . . .	1 drachm.
Water to . . .	3 ounces.

Doses: From half a teaspoonful to a tablespoonful¹ three times a day. Give sloppy food for two or three days, and then the ordinary diet and cod-liver oil.

When the discharge is glutinous and troublesome the nasal cavities may require considerable attention, especially if the trouble becomes chronic; careful syringing with one part listerine to two parts warm water in glass syringe, with two or three inches of india-rubber tubing attached so that the end of the syringe shall not injure the dog's nostrils. The dog's eyes should be effectually covered with a cloth and patient firmly held by second person, as the operator will require both hands, and it may be necessary to syringe parts with "Waite's Anæsthetic" before using the listerine lotion.

CATHETER, How to pass: The passage (called the urethra) to the bladder is very small in the dog in consequence of there being a bone in the penis. It is also very long. The best kind of catheters are made of gutta-percha, and for small dogs the size called o is large enough. For dogs the size of terriers No. 1 size is required; for collies, etc., No. 2 size; and for larger dogs No. 3. These numbers refer to the diameter. As to length, they must, of course, vary also according to size of the dog—10 inches, 12 inches, 18 inches, and 2 feet respectively. Before being passed, the catheter must be

¹ According to the size of the dog. See p. 81.

well smeared over with vaseline, and the wire left in. The dog should be placed on his left side, with the right hind leg well drawn forward; the penis should be exposed for some inches, and held by means of a soft cloth; the catheter may then be gently passed. After going a short distance, that is to where the penis bends round, it will stop going in, or, at any rate, at this point it will be found a little more force is required to pass the instrument. When this part is reached, the wire should be drawn out for one or two inches, according to the size of the dog, then it will be found the catheter will pass on easily again; when bladder is reached withdraw wire; if it is full of urine, it will commence to drip or dribble away—it never runs away fast, as the orifice in the catheter is small. Let the catheter remain in so long as urine continues to flow, and then gently withdraw it.

A catheter should never be passed more than twice a day. The instrument, when not in use, should, without the wire, be kept in a basin of saturated solution of boracic acid. The wire should be thoroughly cleaned and vaselined, and be put into the catheter just before being used.

The use of the catheter in the bitch is much more difficult and requires a considerable amount of experience and knowledge, as well as the use of a speculum.

CEREBRAL CONGESTION :

Symptoms: Often seen in distemper. The dog may be dull and heavy, or he may be very excited; eyes very congested; temperature high, 104 to 105 degs. F.; constant working of the temporal muscles. Dogs in this condition are often ravenous for food, and diarrhœa may be present. If relief is not given, convulsions usually follow.

Treatment: Keep dog absolutely quiet in a darkened room. If bowels constipated, give purgative medicine, also give from three grains to one scruple of bromide of strontia¹ in water three or four times a day. Apply

¹ According to the size of the dog. See p. 81.

ice in ice-bag or a waterproof sponge bag or sheep's bladder to forehead intermittently for fifteen to twenty minutes at a time, several times a day. It may be necessary to give one to five drops of tincture aconite in water in addition to the bromide of strontia for the temperature and to help the sedative.

Diet: Liquid food only should be given, as milk with Benger's food, egg and milk—the yolk of the egg should not be given if there is much diarrhœa; some mutton broth or Brand's essence may be allowed occasionally. In severe cases a blister or seton at the back of the neck should be applied. (*See article on SETONS.*)

CHOKING :

Symptoms: Dogs frequently choke themselves when eating bones, especially chop or cutlet bones; also occasionally with a large piece of meat which may become impacted in the gullet. But this is not so serious, as it can easily be pushed down into the stomach if it cannot be pulled upwards. When an offending bone or other matter becomes lodged in the back of the throat the dog coughs and retches violently, and may even die from asphyxia. But as a rule the bone does not stop there, but passes down until the gullet passes over the heart, where it is rather smaller, and then the bone is stopped, which causes the dog great distress. He keeps gulping as if trying to swallow, and occasionally retches. In a day or two the distress passes off and the patient seems fairly well and often ready to eat, but if any solid food is taken, directly it reaches the part where the obstruction is it is brought up, and this continues to happen so long as the obstruction remains, but the dog as a rule is able to swallow liquids as milk, egg and milk, beef teas, etc.

Dogs, especially puppies, often swallow needles and pins, which generally become embedded in the back of the tongue, but sometimes they reach the gullet and pass through, causing a bad abscess to form in the throat just

behind the angle of the jaw. Their presence can be detected by X-ray, also position.

Treatment: When the bone or meat or other matter becomes lodged in the back of the throat, it is generally easily removed with the finger. Failing this, forceps must be used; but the symptoms are often very distressing, and prompt relief is necessary. When the bone has passed far down in the gullet and become fixed just over the heart, relief is much more difficult. Sometimes if the dog can be induced to take a few pieces of meat it will force it on. If this fails, forceps must be tried, and if the bone cannot be removed with them, then one must try to push it downwards into the stomach with a probang. Too much force must not be used or the gullet may be ruptured, which is fatal. If it cannot be removed, the dog must be fed on liquid food, and in time the points of the bone, if soft, may become dissolved, and then it will be easier to push it down with a probang. The gullet may become sacculated, in this case rendering the bone immovable. Opening the gullet (œsophagotomy) would be called for if the foreign body is sufficiently anterior to the heart; if behind the heart it might be reached by opening the stomach after abdominal section; both are open to some risk.

In removing needles from the back of the tongue or fauces, which is best done with forceps, care must be taken not to break them. The tongue should be drawn well forward out of the mouth by taking hold of it with a cloth so as to bring into view the back of the tongue and fauces.

CHOREA (St. Vitus's Dance) :

Symptoms: Irregular contraction of the muscles. Almost any part of the body may be affected, even the tongue, the dog jerking it out of the mouth constantly. But the disease more often affects the limbs, perhaps one fore leg and one hind leg, or the muscles of the shoulder

and neck; occasionally the muscles of the abdomen, the dog always appearing to be suffering from hiccough. The temporal muscles are a common seat of chorea, and in such cases the dog is constantly snapping his teeth together. It is one of the *sequelæ* of distemper.

Treatment: In bad cases the disease is incurable, but often with time—in the course of months—the twitching becomes less, though it never entirely disappears. There is no specific for chorea; what appears to do one case good seems to do harm in another. Small doses of arsenic with bromide are sometimes a useful remedy, as the following mixture:—

Recipe:

Bromide of Strontia . . .	1 drachm.
Fowler's Solution of Arsenic .	48 minims.
Water to	3 ounces.

Dose: From half a teaspoonful to a tablespoonful¹ three times a day after food.

In other cases Easton's syrup answers better. Donovan's solution is useful when a continuous treatment is given.

Dose: From three or four drops to half a drachm,¹ in a little water, three times a day after food. Later, especially if there is much wasting, cod-liver oil should be given. Rest and quiet, plenty of good food, and liberal supply of fats; raw suet given with other food is an extremely good form; if refused in any other form try fresh dairy cream. There is a much-talked-of injection of emulsified rabbit's brain, but little confirmation for it at present.

COINS, etc., Swallowing of :

Symptoms: The dog has a big swallow, and it is astonishing what can pass down his throat into the stomach. I have known small dogs as fox-terriers to swallow coins the size of a penny, and smaller dogs still to swallow brooches, ear-rings, and finger-rings, and

¹ According to the size of the dog. See p. 81.

also keys, without even seeing any bad results to the dog, though the owner has been much alarmed as to what was going to happen; but corks are dangerous, as they block up the intestines, and so are big round stones; but small stones dogs swallow with impunity. Dogs, even small ones like pups, swallow occasionally meat skewers, but even such things as these do not always prove fatal. I once had under my care a small pup who had swallowed a hat-pin ten and a half inches long; the head indeed passed into the stomach, but the puppy was too small to take the whole length of pin, and the point, piercing some of the vital parts of the throat, killed him. (A. J. S.)

If after an X-ray picture has exhibited the contents of the stomach and the foreign body or bodies are judged to be returnable, a solid or stodgy meal should be given, then apomorphia injected hypodermically ($\frac{1}{10}$ th of grain in brandy). Sickness will take place in rather less than three minutes and the recent stodgy meal will dilate the mouth of the stomach and the gullet and bring back with it the offending foreign body. It is not policy to use apomorphia if long pins or skewers from cat's meat or from the kitchen are found to be present; an immediate operation is called for.

It is often difficult by manipulation to detect things that have been swallowed, for as a rule, as before mentioned, they remain in the stomach for a considerable time before passing into the intestines. I have known coins to remain there for five or six months before being passed; however, with the Röntgen rays coins, keys, jewellery, stones, etc., can always be detected.

Treatment: Unless the foreign body is large and is doing the dog visible harm, it is best left alone. Feed on solid food as suet puddings, rice, bread, meat and such like foods, so as to distend the bowels as much as possible and to cause large motions, and the foreign body, in all

probability, will pass out safely; *do not give purgative medicines*, which only cause contraction of the bowels and do harm, but if there is pain give from two ¹ to ten drops of laudanum in a little water, three or four times a day, or oftener.

When the substance swallowed causes real obstruction in the bowel, the laudanum may be given a trial, but as a rule an operation becomes necessary, which consists in opening the abdomen, finding where obstruction is, and opening the bowel and removing the offending matter. It is an operation requiring aseptic precaution and some care, and the sewing up the incision made into the bowel wants carefully doing or a stricture may result.

COLD IN THE HEAD: See CATARRH.

COLIC:

Symptoms: Generally affects puppies from eating rubbish, but may also affect adult dogs, especially after receiving strong medicine as worm medicine. Restlessness, crying and whining, or even howling when pain very severe; abdomen tucked up and muscles feel hard and rigid. The attack may be accompanied by severe vomiting and diarrhœa.

Treatment: Give immediately, if there is no diarrhœa, a dose castor oil, which should be followed by an enema if it does not operate in about an hour. The enema may consist of half ¹ to two teaspoonfuls of glycerine, mixed with one ¹ to eight tablespoonfuls of warm water. Also give following mixture:—

Recipe:

Chloric Ether	.	.	.	1½ drachms.
Laudanum	.	.	.	1½ drachms.
Water to	.	.	.	3 ounces.

Doses: From half a teaspoonful to a tablespoonful ¹ every two, three, or four hours until pain relieved. Also

¹ According to the size of the dog. See p. 81.

give hot compresses sprinkled with laudanum on abdomen when pain is present.

COLLAPSE :

Symptoms: The dog lies in a semi-unconscious condition; the body feels cold; the membranes are pallid, eyes glassy; the breathing slow and heavy; pulse weak. This condition may arise from shock, and is often seen in dogs after being run over. It may also occur as the result of hæmorrhage, when the mucous lining of cheeks and gums, also inside eyelids, will be blanched; two to ten drops of thlaspi in warm starch emulsion—tablespoonful to two ounces—as enema, will be indicated.

Treatment: Allow the dog to lie perfectly quiet on his *right* side. Give stimulants, as brandy, with from one ¹ to ten drops of tincture nux vomica in water if given by the mouth, but only half if injected under skin. If this cannot be done, give an enema of milk and brandy, or strong black coffee. If body very cold, put hot-water bottles round it. Do not examine dog for injuries or fractures, even if it is a case of being run over, until consciousness has returned.

COMA :

Symptoms: Entire loss of consciousness, heavy breathing, pupils dilated, etc. This condition may result from injuries to head; sometimes follows a severe attack of epilepsy, apoplexy, and it is the last stage previous to death in many illnesses.

Treatment: This entirely depends on the cause. If the result of epilepsy, the patient is best left quite alone for many hours; if the body becomes cold, hot-water bottle may be placed under it and also to the back. After some time, if there are no signs of return to consciousness, the body and limbs may be well hand-rubbed, and brandy injected subcutaneously. If the result of injuries to head, should the skull be fractured an operation may

¹ According to the size of the dog. See p. 81.

be necessary; but if there is simply concussion of the brain, the animal must be given time—the condition may last three or four days, and yet the dog may recover. Except to secure quietness, there is not much to do. Should the dog be very restless, use an ice-bag to head if the temperature is normal ($101\frac{1}{2}$ degs. F.) or rising above normal; but if temperature is sub-normal and the body cold, *use no ice*; and to maintain strength give about every four hours an enema of peptonized milk, from one tablespoonful to a cupful,¹ or one or two meat suppositories. When coma is the result of the last stage of illness, there is little to be done. The inhalation of oxygen may be tried; brandy or strychnine, $\frac{1}{300}$ th to $\frac{1}{100}$ th of a grain¹ may be injected under the skin, and an enema of strong black coffee given.

CONJUNCTIVITIS (Sore and Weak Eyes) :

Symptoms: The conjunctival membrane lining the inside of the eyelids is much congested, and of a dark red colour; there is a constant flow of watery discharge; in bad cases there is a discharge of white pus which causes the lids to adhere together. The hair falls off around the lids, and the cornea, or anterior surface of the eye, may become cloudy and ulcerated.

Treatment: In simple cases an application of boracic lotion, made by dissolving half a teaspoonful of boracic acid in half a pint of hot water, which should be applied often, is generally sufficient to effect a cure. In bad cases when the discharge is purulent, the following should be used:—

Recipe:

Chinosol	.	.	.	.	.	3 grains.
Water to	.	.	.	.	.	6 ounces.

Apply several times a day, letting a little run on the inside of the lower lids. Iodoform dusted on the inside of the lower lid is also useful in purulent conditions.

¹ According to the size of the dog. See p. 81.

The edges of the eyelids should be kept smeared with yellow oxide of mercury ointment, half strength, to prevent them from sticking together, but white vaseline should be used in conjunction with iodoform.

CONSTIPATION :

Symptoms: The motions are large, hard, and dry, and difficult to pass; and instead of having an action at least once a day, the dog may have one only every two or three days.

Treatment: A good deal can be done by diet. Spratt's biscuits have a tendency to keep the bowels open and regular; for small dogs the Pet-Dog biscuits should be given, and for big dogs the large biscuits. They should be broken up and soaked in some soup, mixed with a little meat, and some green vegetable added; this makes a very good principal meal. For a second or evening meal the biscuit may be given dry. For a change of diet give underdone liver and cooked sheep's brains for small dogs, brown bread, and green vegetables in equal parts moistened with soup. In obstinate cases some laxative may be necessary. Milk of sulphur answers very well; from sufficient to cover a threepenny-piece to half a teaspoonful¹ may be given daily for a fortnight, or a teaspoonful¹ to two tablespoonfuls of Dinneford's fluid magnesia may be given every morning in a little milk. In some cases salad oil answers best, from half a teaspoonful to a tablespoonful¹ mixed daily with the food. In chronic cases a course of the following pills is useful:—

Recipe:

Ext. Belladonna . . .	1 to 6 grains. ¹
Powdered Rhubarb . . .	3 to 18 grains.
Reduced Iron . . .	4 to 24 grains.
Powdered Nux Vomica . . .	1 to 6 grains.

Mix.

Divide into 12 pills—one to be given twice a day after food.

¹ According to the size of the dog. See p. 81.

CONSUMPTION (Tuberculosis) : Caused by the entrance of the tubercle bacillus into the system either by way of lungs or stomach (breathing or eating). The tuberculin test can be used for diagnosis. In any case if the test reveals the presence of the disease the warning is given to the owner not only for the sake of other animals but for the human beings in the same house, and the responsibility is great.

Symptoms: The disease is rare in dogs. At first a dry cough, later becoming looser with expectoration of phlegm; wasting, though appetite may at first be fairly good; the patient gradually becoming very weak, and occasionally having diarrhœa. There are always present one or more degrees of fever, and the temperature is generally higher at night. If the phlegm be examined with a microscope the tubercle bacilli will be found if it is a case of consumption. In bad cases there is bleeding from the lungs, the blood coming as a rule through both nostrils.

The dog can, of course, be treated; but if the symptoms are severe there is little likelihood of recovery, and in any case complete isolation should be ensured. Professional advice should be employed and carried out without delay.

CONVULSIONS IN PUPPIES :

Symptoms: Young puppies, generally as the result of worms or during second dentition, often have convulsions. The immediate cause of the attack is generally excitement, more particularly on a hot day. The puppy, which may be apparently quite well, suddenly tumbles over on its side, kicks violently with its legs, champs the jaws, and froths at the mouth. In a minute it gets up, and looks about in a dazed manner; then, if not restrained, gallops off barking, not knowing where it is going. Sometimes one attack may follow another in quick succession until it dies from exhaustion.

Treatment: The puppy should be held to prevent it

knocking itself about. (I may here remark that there is not the least danger of hydrophobia from a bite of a dog when suffering from fits of any kind.) As soon as the puppy can swallow, a dose of the following mixture must be given:—

Recipe:

Bromide of Potassium . . .	1 drachm.
Hydrated Chloral . . .	1 drachm.
Water to	3 ounces.

Dose: From a teaspoonful to a tablespoonful¹ to be given every two, three, or four hours, according to the severity of the symptoms. If the puppy is unable to swallow, double the quantity should be injected into the bowel, mixed with equal quantity of tepid water. In severe cases a hot bath is beneficial; also ice may be applied to the head. Keep the puppy in a quiet, cool, dark room for some hours after the attack. To prevent a recurrence of the convulsions, treat puppy for worms. Feed on a milk diet for a few days.

CORNS : Horny elevations which form on the pads of the feet.

Treatment: They may be removed by cutting, or destroyed. The best way is by the application of a solution of chromic acid, one in four. It should be applied sparingly to the part with a glass rod about twice a week.

COUGHS :

Symptoms: May arise from many causes; but a simple cough, the result of some irritation of the larynx caused by cold, is of common occurrence during the winter and spring when the winds are cold.

Treatment: Give following mixture:—

Recipe:

Liquor Morphia	2 drachms.
Syrup of Squills	1 ounce.
Syrup of Lemon	1 ounce.
Water to	3 ounces.

¹ According to the size of the dog. See p. 81.

Dose: From half a teaspoonful to a dessertspoonful three or four times a day.¹ When it is difficult to give a mixture, the following pills may be tried:—

Recipe:

Hydrochlorate of Morphia	.	$\frac{1}{4}$ to 1 grain. ¹
Powdered Ipecacuanha	.	1 to 6 grains.
Powdered Rhubarb	.	2 to 12 grains.
Compound Squill Pill	.	6 to 20 grains.

Mix and divide into twelve pills, one to be given night and morning. A dose of aperient medicine should occasionally be given. If there is a rise in temperature (normal $101\frac{1}{2}$ degs. F.) the patient should be kept comfortably warm and free from draughts, and a few doses of the following febrifuge given: two to five grains of acetyl salicylic acid in powder form with or after food in a little butter, twice a day.

CUTS :

Symptoms: Division of structure, generally described as a solution of continuity; there is generally more or less bleeding.

Treatment: Thoroughly cleanse the cut with a warm solution of boracic acid, Condy's fluid well diluted, or one per cent. solution of Jeyes' disinfectant fluid. Stop bleeding by applying pressure with fingers, or a pad of absorbent boracic wool, and bandage. When very severe, apply a ligature to the vessel above the part.

After cleaning the wound and stopping the bleeding and removing hair, the edges of the cut should be brought together with a few stitches, about a sixth of an inch apart; a pad of some disinfectant gauze applied, also a bandage. If no swelling or discharge, the dressing need not be disturbed for a day or two; the stitches can be removed in a week. Afterwards re-bandage for another day to protect the part from dog's tongue.

¹ According to the size of the dog. See p. 81.

CYSTITIS : *See* BLADDER, IRRITABLE.

CYSTS : Could be classed with tumours and are themselves generally divided into four varieties: (1) Congenital; (2) Blood Cysts; (3) Parasitic; (4) Retention Cysts and Distention Cysts. In the dog the first variety needs mention only. The second, however, is fairly common in the ear and is usually caused by shaking of ear against collar or kennel, or through some other injury whereby the small blood-vessels between the inner and outer skins of the ear are broken down and ooze into the softest part of those tissues forming a blood tumour or hæmatoma. This needs opening, at the earliest opportunity, quite freely at its lowest part to allow for drainage; sometimes a drainage tube needs insertion; others after opening need freeing from membranous matter adherent to cyst wall; others again require sewing up, and if not treated correctly they are certain to cause malformation of the ear, and a shrivelling of that organ sometimes occurs even after the most careful treatment. Professional advice and treatment should be obtained. The fourth variety gives us the Ranula and Wen (Sebaceous Cyst), which are mentioned in articles under their individual names. The third, or Parasitic, may be external or internal, the Hydatid Cyst being the most common. I once removed one from under the skin of a pet rat, over the ribs, the size of a lemon (F. W. C.). When found should be removed professionally.

DANDRUFF (Scurf) :

Symptoms: Dryness of the skin and hair, and the rising of branlike greyish-white scales from the former, mixing with the coat.

Treatment: As a rule, a thorough wash once a week, using a coal-tar soap (not carbolic). Oatmeal bath twice a week in more stubborn cases. A double-handful of fine oatmeal, two ounces glycerine, in a gallon of just warm water, well mixed and thoroughly rubbed into skin

and carefully dried, will do what is necessary, especially if the yolks of from two to six eggs are beaten up and added. Put a little borax in the rinsing water. Brush coat daily.

DEAFNESS : Examine ear by aid of speculum to see if there is any foreign body present. I once removed one of the metal hooks that were used for ladies' dresses, causing complete deafness and much pain; this was securely wedged at base of ear cavity. When removed and parts carefully treated, hearing returned and injured parts healed (F. W. C.). An ordinary "tuning fork" is one of the best things to test for deafness.

Causes: In many cases, especially in white dogs, as bull-terriers, it may be congenital. In ordinary cases it is often due to an accumulation of dirt or of hard wax, or from growths in the canal of the ear. In old dogs it may be due to thickening of the drum of the ear.

Treatment: When congenital it is incurable. If result of growths in the ear, these must be removed by operation. When caused by accumulation of hard wax, a little warm almond oil should be poured into the ear, and the next day the ear should be thoroughly syringed with five ounces of tepid water in which has been dissolved a scruple of carbonate of soda. When the deafness is due to a thickening of the drum of the ear, which is often seen in old dogs, there is nothing to be done.

DEBILITY :

Symptoms: May be due to constitutional causes, as is often seen in highly-bred puppies, or it may result from severe illness, particularly after distemper. The pulse is quick and weak, wasting, loss of appetite, and disinclination for exercise, poor condition, and membranes pale, presence of worms.

Treatment: When it is the result of illness, the following tonic may be given:—

Recipe:

Ammoniated Citrate of Iron .	$\frac{1}{2}$ drachm.
Tincture Nux Vomica . . .	40 minims.
Tincture Gentian . . .	3 drachms.
Water to	3 ounces.

From half a teaspoonful to a tablespoonful¹ three times a day one hour before food.

Diet: Underdone or raw meat, eggs beaten up in fresh milk, Roboleine, Virol; fresh ripe fruit for some young dogs when they will eat it, such as apples and oranges (when sweet), and spinach cooked in the branch, then cut up and mixed with some cooked meat and good soup or beef tea. Some dogs enjoy orange juice when really sweet.

DEFORMITIES, Congenital: These are numerous in the dog. Inverted eyelids: puppies are sometimes born without eyes, squinting small eyes, eyelashes growing in. Hare lip, cleft palate, pig jaw, deformities of the feet and limbs: particularly the stifle joint, the patella being out of its place, and the leg contracted or drawn up. Deformities of the chest: this condition is common in Japs, the sternum (breast bone) turns in instead of out, pressing on heart or lungs. Puppies are sometimes born without tails; though a good feature in schipperke and bob-tail sheep dogs, one does not like to see a pug or a dachshund without a tail, and when he is good in all other points, it is disappointing. A screw tail is objectionable in all breeds except the bulldog, and some people object to it in these dogs. In these tailless cases if the dogs are required for show they should be destroyed at birth. Absence of one or both testicles.

Treatment: Many cases of deformity may be remedied by operation, but in others there is nothing to be done. Inverted eyelids can be cured by operation, an elliptical piece of skin and also the muscle underneath being cut

¹ According to the size of the dog. See p. 81.

out immediately under the lower eyelid, when that is the one affected, or immediately over the upper eyelid, if it is this that is turned. The cutting is best done with curved scissors, and should extend nearly the whole length of the lid. As the wound made heals, it draws the lid out. Often seen in Chows.

In-growing eyelashes must be plucked out with forceps from time to time. Very often as the puppy grows older and stronger, the lashes assume a normal position, and cease to be a trouble, but if they continue to turn in after the dog is twelve months old, a similar operation to that for inverted eyelids is recommended, but in these latter cases it is not necessary to divide the muscle, but only the skin. Squinting may be cured by operation, but is not recommended unless very skilfully performed.

In cases of unnaturally small eyes, which often occur in fox-terrier puppies, an operation is not of any use; but with time, it may be months, perhaps a year, the condition often improves. Matters are helped by giving the puppy affected something to stare at, as, for instance, placing his food for a time behind some railings, so that he can see it, but cannot get at it: anything, in fact, that attracts attention, and causes the puppy to stare. A stuffed cat behind the railings, a lump of raw meat or a bone does for a change. Hare lip can be cured by operation, but in consequence of the position, it is difficult to keep the edges of divided lip together after sewing them, as the puppy will rub his nose on the ground if he has a chance, besides constantly licking at the stitches. The operation should not be undertaken before the puppy is three months old, and then just before operation a good square meal of meat should be given; this will take some time to digest, and will satisfy the puppy for a long while; at any rate, nothing more should be given for twenty-four hours, by which time the healing has made good progress, and for some days after the operation the

puppy should be fed from the fingers, piece by piece; certainly no dish should be given for him to rub his nose in. His water can also be administered from a feeding-cup with fine spout, and given slowly in pouch of cheeks.

As to the operation, the edges of the split lip should be freely scarified, and also loosened from the gum by cutting through the mucous membrane, then the two edges of the lip should be brought firmly together with pin sutures, and a few layers of collodion painted over the external part, and dusted over sparingly with powdered iodoform. It is not necessary to give chloroform for an operation of this kind; a few drops of a four per cent. solution of cocaine (for delicate puppies, use "Waite's Anæsthetic") injected into each side of the divided lip is sufficient.

There is no satisfactory cure for cleft palate, and a puppy born with this condition should be destroyed.

Pig jaw is incurable.

As to deformities affecting the feet, a dog may be born without toes, or with only two or three toes; in such cases, of course, nothing can be done. Sometimes there may be an extra toe. If a show dog, it spoils the appearance of his foot, and interferes with his gait, and so must be removed.

Dew-claws are not a deformity, but they are a useless appendage, and should be cut off close to the leg about three or four days after birth; if left they are a constant nuisance, either through being frequently broken, or torn off at the quick, or else turning and growing into the flesh, which causes a good deal of pain.

Nothing can be done for deformity of the stifle joint; it causes no pain, though it renders the leg useless; bitches may be kept for breeding purposes.

In cases of absence of one or both testicles in the scrotum, there is nothing to be done. A dog with both testicles absent is useless for getting stock, though he is

able and will serve a bitch, but in cases where only one is missing, it does not prevent such a dog being useful for stud purposes. I have possessed dogs with only one testicle which have proved eminently successful at stud. Very many breeders have had the same experience, Countess Howe's Labrador Champion Bolo being a case in point. Among practical breeders with any considerable experience this is accepted as an axiom, though some deny it.—F. W. C.

DELIRIUM:

Symptoms: Restlessness, constant howling and barking. Dogs in this state lose flesh very rapidly. Delirium is seen in some bad cases of distemper.

Treatment: Unsatisfactory; bromide of strontia may be tried; from two¹ to sixteen grains in water three or four times a day. Ice-bags should be applied to head, intermittently.

Diet: Give easily digested food—as Benger's with milk, and well-boiled tripe or fish, with rice or stale bread.

DESTROY DOGS, How to: There is no doubt that the quickest and most painless way of killing a dog is by shooting, providing it is done properly, and the man is a good shot and can be relied on. The best place to hit a dog is behind the ear; but there are many people who do not like an old favourite destroyed in this way. I consider a large dose of morphia, and then chloroform, is better. At any rate, it is not such an unpleasant way of taking an old favourite's life. A chloroform-box is the best method (not coal gas); but if no box is available, then to destroy a dog with morphia and chloroform, from half to two grains of acetate of morphia¹ should be injected under the skin; then after waiting until the dog is in a heavy sleep, chloroform should be slowly administered. It is necessary

¹ According to the size of the dog. See p. 81.

to do it very slowly indeed, or else the dog will wake up. In this case do not place anything over the dog's nose at first, but pour a trifle on a handkerchief or napkin, and hold it from six to eight inches away from the dog's nose, then gradually get nearer and nearer until at last you cover the dog's nose over with the cloth. The chloroform must be continued until the dog has *stopped breathing for five minutes*.

The administering of half ¹ to a drachm of fresh prussic acid (hydrocyanic acid) is also a very sudden and quick way of destroying a dog. The dog invariably cries out loudly after it has been administered a few moments, and undoubtedly suffers acutely.

When administering this acid, one should be very careful never to stand in front of the dog, for if he coughs while it is in his mouth, and some goes into the eye of the administrator, the consequences may be serious.

DIABETES INSIPIDUS : Is the term applied to simple frequent increased urination (polyuria) without sugar, and should not be confused with a temporary condition found largely among young dogs. It is not so common as diabetes mellitus, nor so serious.

Great thirst, large quantities of urine passed of a light colour, weakness and emaciation ensue; the wasting is not so marked nor so rapid as in mellitus, but the quantity of water taken and passed is more. The abdomen is naturally distended.

Treatment: Keep body comfortably warm. Give water little and often to a reasonable amount, and do not prohibit it. Also place a large lump of ice in the grill of a sponge bowl and allow licking, as the lack of fluid causes considerable discomfort and hence tends to exhaust patient. Allow meat diet; avoid cereals and biscuits. The most useful drug is valerian. Give for dose:—

¹ According to the size of the dog. See p. 81.

Recipe:

Valerianate of Ammonium	. 3 to 10 grains.
Bromide of Ammonium	. 3 to 10 grains.

Made into pills and coated.

Opium in any of its forms is not so useful in this kind of diabetes. Fowler's solution of arsenic as a tonic is useful sometimes in combination with iron, or:—

Recipe:

Reduced Iron		$\frac{1}{3}$ rd grain.
Strychnine		$\frac{1}{200}$ th grain.
Arsenious Acid		$\frac{1}{100}$ th grain.

Make into coated pill; give terrier size one twice a day.

DIABETES MELLITUS: A constitutional disease characterized by the passing of large quantities of urine containing sugar.

Symptoms: Great thirst, voracious appetite, and gradual wasting of body. The tongue is dry and parched, and is of a red-brick colour; coat stales, and the dog looks generally unhealthy. Coma is a terminal and the most dreaded symptom. The number of satisfactory cases in dogs is far less than in human beings. Diet is the principal form of treatment.

Treatment: Food containing sugar or starch must be avoided; meat given nearly or quite raw is the best diet. As to medicine, though it is practically an incurable disease, Fowler's solution of arsenic one to four drops in water twice or three times a day in early stages, then give codein, which does in some cases mitigate the symptoms. Of this medicine, give from a twelfth¹ to half a grain three times a day. After a fortnight or so the dose may be doubled. This can be alternated with the arsenic treatment if advisable. An American treatment said to give very good results is:—

Recipe:

Antipyrin	2 grains.
Fluid Extract of Jambul	2 drops.
Codein Sulphate	$\frac{1}{2}$ grain.

Make into tablets; one twice a day for terrier size.

DIARRHŒA:

Symptoms: Frequent watery motions, which may vary in colour—white, slate, brown, black, and sometimes green—accompanied very often by great thirst and loss of appetite and straining.

Treatment: In most cases a small dose of castor oil at the commencement of the attack does good, and in many cases effects a cure. Should the symptoms continue after the effects of the oil have passed off, give from five¹ to twenty grains of carbonate of bismuth three or four times a day before food, or the following mixture:—

Recipe: The Mixture for Diarrhœa:

Laudanum	1 drachm.
Tincture of Rhubarb	4 drachms.
Peppermint Water to	4 ounces.

From one teaspoonful to two tablespoonfuls¹ three times a day. Or the following pills may be tried:—

Recipe: Pills for Diarrhœa:

Extract of Kino	1 drachm.
Powdered Ipecacuanha	12 grains.
Powdered Opium	6 grains.

Excipient *q.s.*

A sixth, fourth, half, or the whole¹ may be mixed and divided into twelve pills. One to be given three or four times a day. If the motions are very offensive, from two¹ to ten grains of salol may also be given three or four times a day.

Diet: At first liquid, as milk, thickened with equal parts of arrowroot and Benger's food; after two or three

¹ According to the size of the dog. See p. 81.

days, raw beef cut up very fine may be given alone or mixed with equal parts well-boiled rice; rice water to drink. In chronic diarrhœa a liquid diet should be given for some time, and in addition to the milk diet previously mentioned, home-made beef tea (with all fibrine removed) may be given slightly thickened with isinglass, and the following mixture tried:—

Recipe:

Diluted Sulphuric Acid	.	2 drachms.
Laudanum		1 drachm.
Water to		8 ounces.

Dose: From a teaspoonful to two tablespoonfuls¹ three times a day. When there is much straining accompanying the diarrhœa, it is a good plan to give an enema consisting of one teaspoonful to two tablespoonfuls¹ of thick-boiled starch, with from three¹ to fifteen drops of laudanum mixed. When the diarrhœa is due to disordered liver, which is generally the case when the motions are white or grey, from one¹ to six grains of grey powder may be given at first instead of castor oil. Keep patient warm.

DIARRHŒA IN PUPPIES :

Symptoms: Very often the result of worms, but may be due to indigestion, the result of improper or too much food. The motion is liquid and frequent, generally of a yellowish colour.

Treatment: If worms are suspected give fasting one grain freshly powdered areca nut to every pound the dog weighs, followed in a few hours by a small dose of castor oil, and after it has worked off give from two¹ to six grains of carbonate of bismuth every four hours. If the diarrhœa is accompanied by colicky pains give also from two¹ to ten drops of paregoric in a little water three or four times a day. Repeat dose for worms in a week.

¹ According to the size of the dog. See p. 81.

Diet: If the patient has been kept on a milk food, discontinue this, and give scraped lean raw meat, a small quantity four times a day; but when a meat diet has been given and the diarrhœa continues, then give milk with Bengers' food or Plasmon. In very obstinate cases from a quarter¹ to one grain of grey powder once or twice a day for three days is often useful. Dry arrow-root biscuits or stale sponge-cake.

DISCHARGE FROM EAR: *See* EAR CANKER.

DISLOCATIONS: *Toe, Dislocation of:* Remember in all dislocations and fractures that, now the X-rays are so easily obtained and at a comparatively reasonable price, if there is any doubt a radiograph should be obtained before there is much manipulation or before a limb is finally set.

Symptoms: The dog is very lame—in fact, cannot put the foot to the ground; the joint is swollen, and painful to manipulate. If the injured toe is compared with a sound one, it will be found that the lower bone which assists in forming the joint that is dislocated sticks up much more than is natural.

Treatment: As a rule, especially in a recent case, the reduction is not difficult. The toe should be pulled straight with the fingers of one hand, and with those of the other the projecting bone should be pressed into its place. In some cases it may be necessary to give chloroform. A padded splint extending from the back of the knee or hock to just below the foot should be put on, and a bandage applied to prevent the foot being used for a few days.

Knee? (or Carpus), Dislocation of:

Symptoms: This generally occurs in conjunction with fracture of the radius, but it may happen alone. The dislocation generally occurs sideways, and the foot is turned either outwards or inwards. The parts are very painful, and soon swell.

¹ According to the size of the dog. *See* p. 81.

Treatment: The reduction should be attempted as quickly as possible after the accident, otherwise it will be necessary to wait until the swelling is reduced, and this can be helped by the application of crushed ice placed in a woollen bag and applied right round the joint.

It is best to give the patient chloroform before attempting the reduction of a dislocated knee; and when the dog is well under the influence of the anæsthetic the foot should be seized with one hand and pulled in a straight direction from above downwards, and with the fingers of the other hand, during the pulling, the joints should be pressed into their place. As a rule, in dislocation of the knee the ligaments of the joint are often much injured, therefore when the reduction has been completed padded splints and bandages should be applied, as is recommended for fracture of the radius or arm, and be kept on for about three weeks.

Elbow, Dislocation of:

This does not often occur in adult dogs, but is not uncommon in delicate puppies as the result of some violence.

Symptoms: Lameness, and if the dog attempts to put weight on the leg, the elbow turns out. The joint as the result of the dislocation is wider than the one on the other side, but there is not much pain on pressure, as is the case with fracture at the elbow when the inner condyle of the shoulder bone (humerus) is broken off.

Treatment: In reducing this dislocation chloroform is not necessary. The arm should be flexed on the shoulder, and then by bearing pressure on the head of the bone and a twist of the head of the bone inwards the reduction is completed. The joint is to be afterwards fixed in its place with strips of adhesive plaster applied as depicted in the illustration annexed. If the bones cannot be kept in their place with the plaster, a splint cut out of thin zinc and of

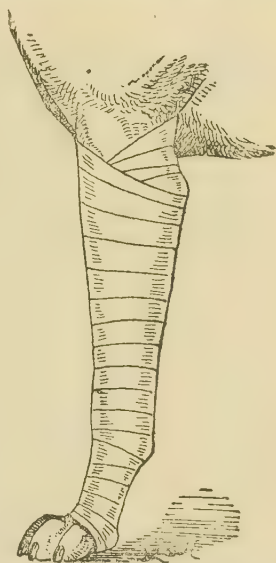
the shape of the elbow joint must be applied. The inside of the splint should be slightly concave to fit the leg, and of course well padded before being put on.

Shoulder Joint, Dislocation of:

Symptoms: Lameness; pain at the seat of injury, which is increased by putting leg forward; and some slight swelling; the leg is perceptibly shortened. When there is any difficulty in diagnosing the case, all doubt is removed by making the dog stand evenly on both fore legs and comparing the sound shoulder with the injured one.

Treatment: In all cases I have seen of dislocation of the shoulder joint the head of the shoulder bone, which fits in a cup at the bottom of the blade bone, shoots upwards—of course only to a slight extent, as the bone is held in its position by strong muscles and tendons as well as by the capsule of the joint. Chloroform having been given, an attendant must hold the dog firmly by claspings his hands between the fore legs in front of the chest, or by fixing a towel in a similar position; and then the operator, seizing the paw with one hand, must pull the limb in a forward and downward direction, and at the same time with the fingers of the other hand press the head of the shoulder bone into its position. It is well afterwards to put a wide bandaging on round the chest over the shoulder joint, and keep the dog quiet for a few days.

Hock, Dislocation of:

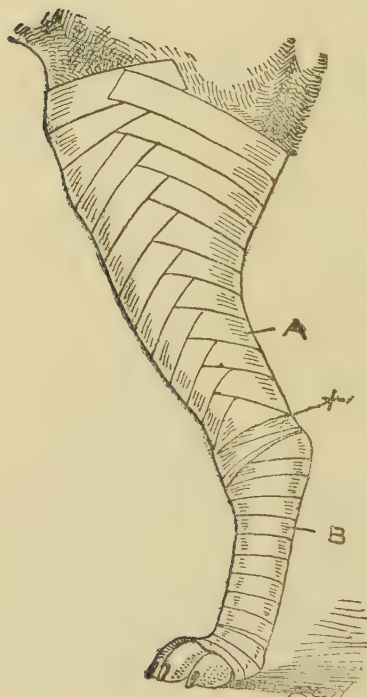


How to bandage the fore leg for fractures and other injuries.

This does not often occur except in conjunction with fracture at this part.

Symptoms: The dislocation occurs generally sideways, and may be either outwards or inwards, the foot being placed almost at right angles. The joint quickly swells, and is very painful.

Treatment: The reduction is carried out in a way similar to that advised for reducing a dislocated elbow; afterwards the same kind of splints as recommended for treating fracture of the tibia are to be applied with bandages, and should be allowed to remain on for at least three or four weeks, and even after this it may be necessary to support the joint with a few strips of plaster for a time.



How to bandage the hind leg for fractures and injuries to the stifle, etc.

A—Sticking-plaster Bandage.

B—Linen Roller Bandage.

Patella, Dislocation of:

Symptoms: The patella is a small bone situated in front of the stifle joint, and is more liable

to dislocation than any other part, especially in small dogs. With some dogs it is constantly slipping out of its place when they run along, and then after a few steps it goes back again of its own accord. The bone almost always becomes displaced towards the inside of the leg,

the dog in some cases being unable to put his foot to the ground; if he does attempt to put any weight on the leg, the stifle joint bends outwards. There is little or no pain caused by this dislocation.

Treatment: The patella is easily returned to its place, but as often as not it slips out again. The best way of reducing this dislocation is to straighten the leg and draw the foot towards the elbow of the same side, and then with the fingers of the other hand push the patella into its place; afterwards, to keep it there, bind the joint with several layers of Mead's plaster as depicted in the illustration. The plaster should be continued for some distance above the joint.

DISTEMPER: A contagious febrile disease to which all dogs, domestic and wild, are liable. Average period of incubation five to fifteen days.

Prevention: This should be the aim of every dog owner, not only for the sake of his own dog but for other dogs with whom he may come in contact and so become a centre of infection for a considerable distance, in many cases with dire results to the patients and to the owner's pocket and feelings. The latest preventive treatment is one which holds out more than any other the reasonable hope of being satisfactory. It has been developed by assiduous work at the farm laboratories of the National Institute for Medical Research, Mill Hill, England, and was originated by The Field Distemper Fund.

The National Institute have two methods:—

1. First to use a vaccine to prepare the patient for the use of a virus at a later date (a week after).
2. The introduction of a serum on one side of the dog and a virus on the other side simultaneously.

Some good results have followed from both of these methods, but it is a question whether they have had a

sufficiently long trial to justify a definite judgment on their efficacy (March 1932). The vaccine alone if used twice (at a week's interval) will give about six months' immunity.

None of these (vaccine, serum, or virus) can be purchased by the public, but by veterinary surgeons only as their use requires professional knowledge.

Symptoms: The first symptom of distemper is a rise of temperature—if a dog is dull and off his food, take the temperature. It is best to take it in the rectum, where the normal is $101\frac{1}{2}$ degs. F.; if taken under the arm or inside of the thigh it is 1 deg. lower. If the thermometer registers 2 or 3 degs. of temperature above normal, you may be sure there is something wrong, and the dog should be isolated at once; by doing this the infection may often be prevented from spreading. If the disease is distemper, other symptoms will soon develop, as a husky cough, loss of appetite and condition, and occasionally vomiting. The eyes are weak and sensitive to light, and there is often a little gummy discharge which collects along the edges of the lids; the breath is offensive, and the teeth become furred. Diarrhœa may, or may not, occur. If the illness is only some passing ailment, the temperature will soon be normal, and the dog assume his usual condition. But the temperature, even in distemper, after two or three days, may go down to normal; do not be deceived by this, and think the dog is all right, but look out for some of the other symptoms mentioned; if the dog is suffering from that disease they are sure to appear, and the fever will return again in a couple of days or so.

People often think a dog cannot have distemper unless there is a discharge from the nose; this is a mistake, but it certainly does occur in most cases, though it does not appear as a rule until the dog has been ill for some time. If the lungs become affected, the breathing is

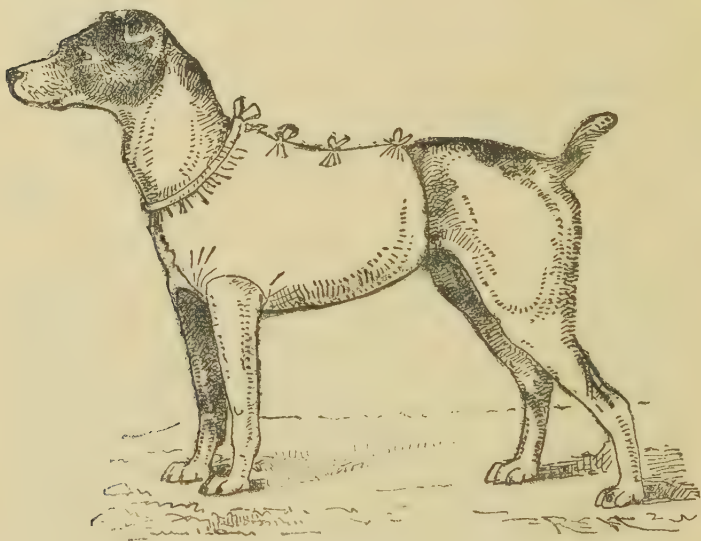
short and quick, not panting with the mouth open; the chest is tender on pressure. At first there is no cough, but after two or three days there is a suppressed painful cough, with retching. The pulse is often much accelerated, the beats varying from 110 to 140 per minute. In some cases the pulse is very slow, and may only be 48 to the minute; this, of course, refers to a big dog. A pulse of this kind is worse than a fast one with pneumonia. When it is between 60 and 70 in a small dog, it is also serious with lung complications. The heart's action in dogs is intermittent even in health. The eyes during distemper are often a source of anxiety, and in dogs with prominent eyes, as spaniels, pugs, etc., there is always an inclination for ulcers to form, which are extremely painful.

The worst complications of all in distemper are those affecting the nervous system; the brain and its membranes may become inflamed, and fits follow, or the spinal cord and its membranes be attacked, and paralysis or chorea, or perhaps both, occur. These complications of the nervous system may often be prevented by not letting the dog out too soon after distemper. The temperature should be regularly taken, and the patient not allowed to go out of doors or be excited in any way until the temperature has been normal at least ten days. Sometimes suddenly changing the diet from liquid to solid food will induce fits.

Occasionally in distemper a crop of pustules appears on the inside of the legs and over the stomach—in fact, in some cases all over the body. This is rather a good sign than otherwise, for they seem to relieve the system of the distemper poison.

Treatment: To treat distemper successfully, good nursing and dry, warm, comfortable quarters for the patient are the two essential things. For outdoor dogs, a loose box in a stable makes a capital place, and in cold weather the temperature should be kept as near 55 degs. F. as possible.

Dogs who are in the habit of living indoors should be put in a well-ventilated room, and the temperature kept up between 60 and 65 degs. F. It is a good plan to cover the floor with sawdust, which should be changed at least once a day, and oftener when necessary. The dog should not be let out of the box or warm room for



A coat covering the chest ; useful in cases of distemper to keep the chest warm, especially when lungs affected. For a dog take coat back as far as penis, where it is cut in a V shape to avoid wetting ; for bitch as far as it will go.

any purpose. Very often at first there are difficulties with very clean dogs, but they can generally be overcome with perseverance. Sometimes a little soiled straw from a kennel used by another dog thrown down in the room is useful. Some dogs may be taught to use a tray or box filled with sawdust or sand. Directly a dog shows signs of distemper he should be sewn up in a flannel coat to keep the chest warm.

As to diet, if it is only a slight case, a light meal of bread or crushed biscuit with gravy or milk may be given three or four times a day.

For a change, a little well-boiled fish with rice, or sheep's head broth and rice, or bread. Milk may be given freely to drink.

In all cases of distemper it is important to keep the eyes free of discharge by cleaning or bathing them frequently with some warm boracic lotion, made by dissolving half a teaspoonful of boracic acid in half a pint of warm water. When the discharge is very free and continues, in addition to keeping them clean with this lotion a little of the following may be run on to the eyes, especially on the inside of the lower lid:—

The Lotion for Eye:

Chinosol	.	.	.	.	.	3 grains.
Water to	.	.	.	.	.	6 ounces.

To be applied three times a day after cleansing with the boracic.

In severe cases where the discharge is very profuse and offensive, a little powdered iodoform may be dusted over the front of the eye two or three times a day. If ulcers form they are to be treated in the same way: and if the eyes are very painful, add to every half-pint of boracic lotion four grains of hydrochlorate of cocaine.

As the dog recovers from distemper, and the discharge ceases, if there is any opacity of the cornea left, the following ointment should be used:—

The Ointment for Eyes:

Yellow Oxide of Mercury	.	.	.	1 grain.
White Vaseline	.	.	.	1 drachm.

Mix.

A small piece should be placed between the lids, and the upper eyelid then gently rubbed over the eye for one minute so as to work the ointment in. Repeat twice a

day. In some cases the opacity is very obstinate, and cannot be removed by the ointment, when the following drops may be tried:—

Divine Stone . . .	2 grains.
Solution Sulphate Atropine .	12 maximum.
Distilled Water to . .	$\frac{1}{2}$ ounce.

One or two drops to be placed in the eye twice a day.

The dog should be held for a few minutes after this lotion has been applied or he may rub the eye.

After distemper, eczema often follows as the result of weakness; tonics should be given and the disease treated in the ordinary way.

Some dogs during distemper, especially in bad cases, discharge a thin, purulent, offensive matter or pus from the skin around the mouth, head, under the neck, and inside of ears. This condition, which is more often seen in bloodhounds than other dogs, is a bad symptom.

The parts should be thoroughly cleansed once a day by being washed with Jeyes' antiseptic fluid diluted eighty times with warm water, carefully dried with soft cloths, and then freely dusted with some absorbent powder, as amyloform, or with the following:—

Powdered Burnt Alum . . .	1 ounce.
Powdered Boracic Acid . . .	1 ounce.
Powdered Starch . . .	6 ounces.

Mixed together.

Tonics, especially quinine, are indicated during this condition, as the discharge is very weakening.

When the appetite is very bad, the patient may be tempted with some giblet soup or a little well-stewed rabbit and bread, or rice. Very often, in bad cases, the dog absolutely refuses all food; he must then be drenched with strong meat tea, or with milk thickened with Benger's food. When there is an inclination to diarrhœa, the beef tea and milk should be thickened with cornflour or

arrowroot. One of the best ways of making meat tea is with beef, mutton, and veal, say half a pound of each cut up in cubes; this should be gently simmered with a pint of water for three or four hours, and then strained off. Of this, from a tablespoonful ¹ to a small teacupful may be given every three or four hours alternately with the milk food. In addition to this, if the dog will drink raw beef tea, which it will often do, this may be given freely. This is best made as follows: Half a pound of lean raw meat passed through a sausage machine; to this add half a pint of water, and place in an earthenware jar in front of a fire for two or three hours, stirring occasionally; then strain off through a cloth. Some pressure is required to get all the juice out of the meat. It requires to be made fresh every day. When the patient is very weak and exhausted, feeding is necessary every hour or two, as only very small quantities of food can be retained. Then strong meat extracts are required. Plasmon may also be tried mixed with milk, and Valentine's meat juice with milk. Of this latter from fifteen ¹ drops to a teaspoonful, with one ¹ to four teaspoonfuls of milk. Invalid Bovril may be given instead of Valentine's for a change in the same proportions, but fresh meat juice from raw meat is as strong as anything. As to stimulants, there is no doubt that when the dog is very low and the pulse weak, from ten ¹ drops to a tablespoonful of brandy does good. When the dog is eating properly by himself, it may be given in a little water after food, but when one is drenching the food it should be mixed with it.

There is no doubt that dogs who continue with a good appetite through distemper do much better, and have a better chance of recovering, no matter how severe the attack may be, than those bad feeders who refuse food and have to be drenched. A little food taken voluntarily does much more good than a lot forced upon the dog;

¹ According to the size of the dog. See p. 81.

therefore I advise tempting the patient with a variety of diet, so as to get him to eat something himself—of course, given in small quantities, particularly when the case is bad. I always commence with soup and milk alternately, mixed with bread, biscuits, or rice; as the dog gets tired of these, I add a little meat, say from a sheep's head or stewed neck of mutton; for a change some fish, boiled tripe, or stewed rabbit, and if the dog goes off these I try scraped raw meat. I never commence forcing food if I can help it, for I find, once this is started, there is always a difficulty in getting the dog to eat anything himself.

As to medicine, the more experience one gets the more one finds this is quite secondary in treating distemper. I do not believe in specifics, and, do what one may, the disease under the best circumstances will run a certain course. In simple cases, where the temperature is not very high, an occasional mild dose of syrup of buckthorn and castor oil is often all that is required. This is necessary, as the dog cannot go out and take exercise; therefore the bowels often get constipated, and if this is neglected troublesome diarrhœa may occur. After the temperature is normal and remains so for a few days, and the dog does not feed well, then some tonic is useful, as the following:—

Recipe: The Pills:

Salicylate of Quinine 12 grains.

Extract of Gentian 30 grains.

Mix, and divide into 24 pills.

Dose: From half to two pills ¹ to be given three times a day.

Quinine does not suit all dogs, for in some cases, instead of improving the appetite, for which it is given,

¹ According to the size of the dog. See p. 81.

it has the opposite effect, when the following mixture may be tried instead:—

Recipe: The Mixture:

Tincture Nux Vomica . . .	40 minims.
Diluted Nitro-hydrochloric Acid . . .	1 drachm.
Compound Tincture Gentian . . .	5 drachms.
Simple Syrup	1 ounce.
Water to	6 ounces.

Dose: From one teaspoonful to a tablespoonful three times a day.¹

It is not necessary to take notice of a relaxed condition of the bowels so long as the motions are not very frequent, but diarrhœa (frequent watery motions) must not be allowed to go on. As a rule, a small dose of castor oil—say from one teaspoonful¹ to a tablespoonful—will usually stop it by removing the cause. If it continues after the oil has acted, give, shaken dry on the tongue, from three¹ to fifteen grains of salicylate of bismuth three or four times, or oftener, a day. Thicken the food with cooked arrowroot, and give boiled rice with soup and meat if the latter is being given.

If bismuth does not stop the diarrhœa, try the pills as per prescription below:—

Recipe: The Pills for Diarrhœa:

Powdered Extract of Kino	1 drachm.
Powdered Ipecacuanha	8 grains.
Powdered Opium	6 grains.

Mix, and divide into 12 pills.

Dose: From half to two pills to be given three or four times a day.¹

In complications affecting the lungs, as soon as they are noticed the chest should be sewn up in gamgee wool covered over with flannel. I have no faith in ordinary

¹ According to the size of the dog. See p. 81.

liniments; and poultices, unless they are applied by a professional hand, often do more harm than good. In very acute cases the hair may be closely cut off over a small patch on each side of the chest, and strong *liniment* of iodine applied with a camel's-hair brush. This may be repeated in four hours, and again four hours later, if the application has not made the skin inflamed and swollen. Of course, the size of the patch must vary according to the size of the dog—from a five-shilling piece to the palm of the hand.

No very special medicine is required unless the heart is affected, which is often the case, when the following mixture is useful:—

Recipe: The Mixture:

Tincture Digitalis	.	.	.	1 drachm.
Tincture Nux Vomica	.	.	.	1 drachm.
Concentrated Solution of Acetate of				
Ammonia	.	.	.	2 drachms.
Water to	.	.	.	6 ounces.

From one ¹ to four teaspoonfuls to be given every four or six hours, according to the severity of the symptoms. If the fever is very high, from two ¹ to ten grains of bicarbonate of potash may be added to each dose. Some brandy may also be given with advantage, from ten ¹ drops to a dessertspoonful every two or three hours, given as previously recommended.

When the nervous system becomes affected during distemper, or just afterwards, it is always a serious matter; in fact, when the brain is attacked and fits are the result, the case is practically hopeless, and if the fits are very severe and frequent it is better to destroy the dog at once, rather than waste time and money in continuing the treatment. When the disease attacks the spinal cord, St. Vitus's dance (chorea) generally follows.

¹ According to the size of the dog. See p. 81.

This is also practically an incurable disease, and in severe cases it is best to put the dog out of its misery, for if it lives it will always be a hopeless cripple. Slight cases improve with time and judicious treatment, but the twitching never entirely disappears, though the dog may recover sufficiently to be shown, and also to be bred from. The disease is not hereditary, though I have sometimes thought that puppies of parents suffering from chorea are more disposed to the disease than others. Again, as the result of distemper, the patient may become paralysed to a more or less extent in different parts of the body or limbs—generally the back legs, though occasionally the fore ones are affected, and sometimes all four legs become useless. I have seen some cases when only the tail has been affected, the dog not being able to move it in the least. In other instances the eyes are the seat of the mischief, and amaurosis is the result. Unfortunately, treatment is almost useless in this latter case. My own bloodhound Champion Cromwell recovered his sight after a terrible attack of distemper convulsions continuously for a week, total blindness for a month, not regaining normal vision for three months. He received electrical treatment for the whole of the three months, together with medicines, and was well enough before twelve months old to go through all his classes at shows and had an unbeaten record during his career. The blindness may not be complete at first, but this paralysis of the eyes is a progressive disease which no treatment seems able to stop. I may here mention that in amaurosis the eye remains clear and bright, and to the casual observer there is nothing to be seen except a widely dilated blue pupil, which ordinary light does not cause to contract, though exposure to the strong rays of the sun will do so *slowly*. If the owner of a patient thus affected is anxious to try some treatment, then I suggest the following (F. W. C.):—

Recipe: The Lotion:

Sulphate of Eserine	.	.	.	1 grain.
Distilled Water to	.	.	.	1 ounce.

One drop to be placed into each eye three times a day.
For medicine, give nux vomica as the following:—

Recipe: The Mixture:

Tincture Nux Vomica	.	.	.	1 drachm.
Water to	.	.	.	6 ounces.

Doses: From one ¹ teaspoonful to a tablespoonful three times a day after food.

Later, the following mixture may be tried:—

Recipe: The Mixture:

Iodide of Potassium	.	.	.	36 grains.
Water to	.	.	.	6 ounces.

Doses: From one ¹ teaspoonful to a tablespoonful three times a day.

A seton may also be placed in the back of the neck just behind the ears, and galvanism may also be tried.

As to the treatment of distemper fits, if they are noticed at the commencement, before they have become severe, something may be done. Large and frequent doses of bromide of strontia should be administered, from three to fifteen grains,¹ in from a teaspoonful ¹ to a tablespoonful of water every three or four hours at first, or so long as there are any fits; when they cease, give the medicine less often—say, every six hours, or four times a day. After a few days, three times a day will be often enough for the medicine, and later twice a day. If there is no diarrhœa, give aperient medicine, and feed on a very light and sloppy food, as bread, with soup or milk, Benger's food, egg and milk, etc. Keep the dog absolutely quiet, and in the dark as much as possible.

¹According to the size of the dog. See p. 81.

When the bromide in large doses is continued for some time, one often notices weakness and loss of power in the limbs; this passes off when the medicine is discontinued.

As to the treatment of chorea, I know of no specific; in fact, medicine has little or no effect at all on this disease. Strong doses of medicine like *nux vomica* or Easton's syrup do more harm than good during the early stages, whereas later small doses of these drugs are beneficial. Directly the twitching is noticed the bromide of strontia should be given, from two¹ to ten grains three times a day. In the course of a week, if the twitching does not increase, some arsenic may be added to the bromide, as from one¹ to five drops of Fowler's solution to each dose. Later, in about a month or so, when all inflammatory symptoms have passed, the eyes clear, and the temperature has been normal for some time, some nerve tonic is useful, but it must be given with caution, or the twitching will increase. Easton's syrup is as good as anything—for very small dogs like Japanese spaniels five drops three times a day in a teaspoonful of water is enough; after a week, six drops may be given; and a week later, seven drops for a dose. The dose for toy spaniels weighing about eight pounds is eight drops; full-sized fox-terriers, ten drops; collies, etc., fifteen drops; St. Bernards, etc., twenty drops. In each case the dose may be gradually increased. If the dog is in very poor condition, petroleum emulsion may be given with the Easton's syrup instead of water. In any case, it is a matter of months before any improvement is noticed. In ordinary paralysis as the result of the distemper, when there is an absence of twitching, bromide in any form does more harm than good. In these cases some preparation of *nux vomica* is required, and I have found the following pills useful:—

¹ According to the size of the dog. See p. 81.

Recipe: Compound Nux Vomica Pills:

Powdered Nux Vomica . . .	2 to 8 grains. ¹
Ergotine	5 to 18 grains.
Reduced Iron	12 to 60 grains.
Excip. q.s. Mix.	

Divide into twelve pills, one to be given three times a day.

If there is no improvement after a short time, a blister applied to both sides of the neck in cases of paralysis of the fore legs is often useful, and in chronic cases of paralysis of the back legs a blister should be applied to the loins. (*See* article on BLISTERS and how to use them.) The blister may be repeated in a fortnight, if necessary. Ultra-violet rays and electrical treatment are useful and necessary, under professional advice.

The bowels should be kept open with mild aperients, and vermifuge medicine given if there are any signs of worms. Dogs suffering from paralysis, the result of distemper, generally recover with time and care.

DISTENTION OF ABDOMEN : *See* FLATULENCE.

DOCKING : When adult dogs are docked for show purposes or for medical or surgical reasons it must be done under an anæsthetic, the flap method being the best, and should always be carried out by a veterinary surgeon.

Puppies should be docked when three or four days old, and the operation should be done with a pair of sharp scissors. The skin should be drawn well forward before severing the tail, then afterwards it slips back and well overlaps the bone. There is, as a rule, little or no bleeding; at any rate, not sufficient to be of any importance. Should there be, it can easily be stopped by the application of a little tincture of perchloride of iron, or of Friar's balsam. It is well after docking a puppy to keep the mother away for half an hour or so.

¹ According to the size of the dog. *See* p. 81.

Different breeds of dogs have their tails docked at different lengths. The fox-terrier should have three-fifths of his tail left. Irish and Airedale terriers rather less than half. In spaniels, about two-fifths of the tail should be left, and griffons about a third.

The breeds which may be docked according to Kennel Club Rules are: Spaniels (except Irish Water), Airedale Terriers, Fox Terriers, Irish Terriers, Kerry Blue Terriers, Sealyham Terriers, Welsh Terriers, Old English Sheepdogs, Poodles, Schipperkes, Schnauzers, Griffons Bruxellois, Toy Spaniels, Yorkshire Terriers, and such other breeds as the committee may from time to time determine.

DOSES: In consequence of the difference in the ages and sizes of dogs, it is always difficult when giving a general prescription suitable for dogs of all breeds to make the doses for dogs of different ages and sizes quite clear. However, to make it as clear as possible, I have divided dogs into eight different sizes, as for instance, griffons and others, 4 or 5 pounds weight. No. 1 size comprises spaniels, pugs, etc., weighing 10 or 12 pounds. No. 2 size, fox terriers, Irish terriers, etc., weighing from 18 to 25 pounds. No. 3 size, bulldogs, field spaniels, etc., weighing about 40 pounds. No. 4 size, collies, retrievers, greyhounds, etc. No. 5 size, bloodhounds, etc., and other dogs weighing about 80 pounds. No. 6 size, great Danes, etc., weighing about 120 pounds. No. 7 size, bigger dogs, like St. Bernards. No. 8 size, mastiffs, etc. Therefore, if the dose advised is from half a teaspoonful to a tablespoonful, it is intended to mean: No. 1 size, half a teaspoonful; No. 2, a teaspoonful; No. 3, a teaspoonful and a half; No. 4, two teaspoonfuls; No. 5, two teaspoonfuls and a half; No. 6, three teaspoonfuls; No. 7, three teaspoonfuls and a half; and No. 8, four teaspoonfuls or a tablespoonful. When pills or powders are prescribed, they are to be divided in the same way.

DOSING : People who are not in the habit of administering medicine to dogs often have a difficulty in giving it. Liquid is best given out of a bottle. The person about to give it should stand on the right-hand side of the dog, place the left hand around the muzzle, then slightly raise the head, place the neck of the bottle inside the cheek, and pour a small quantity of the fluid at a time into the pouch formed by the cheek. If the muzzle is held tightly with the left hand, there is



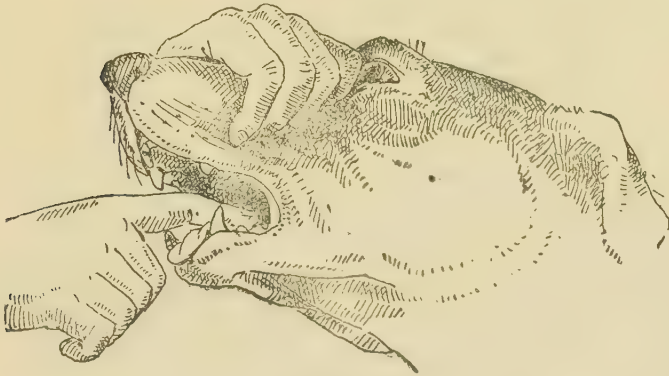
How to give fluid medicine or liquid nourishment to a dog.

no danger of the dog biting the bottle. If the reader is afraid to use a bottle, the fluid may be given with a spoon, but then a second person is required to hold the dog's head, and with the finger pull out the side of the cheek so as to form a pouch in which the medicine should be poured. This is by far a better plan than forcing the dog's mouth open, and pouring the fluid right on his tongue.

To give a pill, stand on the right-hand side of the dog's head, with the left hand placed over the muzzle, forcing the dog's mouth open by pressing the cheek between the teeth, then he cannot bite you. Slightly

raise the head, and drop the pill into the back of the mouth, and then with the forefinger of the right hand just push it into the throat. Close the mouth quickly, and the dog will swallow it.

DROPSY (Ascites, or Abdominal Dropsy): Accumulation of fluid in abdominal cavity; the fluid varies according to cause of the disease. *Do not mistake the following conditions for dropsy:* chronic peritonitis;



Giving a pill.

distended bladder; urine in abdominal cavity as result of ruptured bladder; pregnancy.

Symptoms: In dropsy, the result of heart or kidney disease, the limbs often become swollen, and the abdomen enlarged and pendulous. The fluid may be detected for certain in the abdomen by placing a hand on one side of the stomach, and then gently tapping the other side of the abdomen, and if fluid is present, an undulating motion will be felt like striking a bladder full of water. In dropsy, no matter from what cause, the dog becomes thin about the neck and chest, and the muscles of the limbs waste. As the fluid increases, the size of the abdomen increases; the breathing becomes distressed, and the dog walks with difficulty. In many

cases, when relief is not obtained, the dropsy may extend to other parts.

Many cases of ascites are due to diseased liver, which may become much enlarged, but the condition of the liver may simply be due to defective circulation.

Treatment: Unless the patient is very old, relief may generally be given with the following mixture, continued for some time:—

Recipe: The Mixture:

Acetate Potash . . .	3 drachms.
Tincture Digitalis . .	1 drachm.
Tincture Nux Vomica . .	$\frac{1}{2}$ drachm.
Spirits of Nitre . . .	2 drachms.
Water to	6 ounces.

Doses: From one teaspoonful to two tablespoonfuls¹ three times a day. Also give three times a day in water, after food, from fifteen drops¹ to two teaspoonfuls of Hollands gin. Once or twice a week a dose of purgative medicine should be given, as from three to fifteen grains¹ of jalapine. When the liver is affected, give from two¹ to eight grains of grey powder once or twice a week, instead of the jalapine. In severe cases of dropsy tapping is necessary, but as a rule, in ascites it only gives temporary relief.

DROPSY of the Thoracic Cavity (Hydrothorax): Must not be confounded with pleuritic fluid in that cavity. True dropsy is a transudation due to heart or kidney trouble and is not inflammatory in origin. The fluid can be removed and if the cause of the trouble is diagnosed the condition can be treated, but as a rule the cause is obscure or may not offer itself for curative treatment. Life may, however, be prolonged in many cases where treatment is warranted and in a limited number of cases cures follow.

¹ According to the size of the dog. See p. 81.

DYSENTERY:

Symptoms: Acute or chronic inflammatory disease of the large bowel, with frequent motions accompanied with cramp and straining and consisting of mucus and blood; it is often ushered in by an attack of diarrhœa followed by considerable pain. Rest, warmth and quiet should be ensured. If pain is great use hot bran bags for abdomen; they are lighter than salt. Tincture Thlaspi in from two to ten drop doses in water is sometimes extremely useful in alternation with other remedies. The abdomen is very tender; there is often vomiting and great thirst, and a temperature.

Treatment: Give at once a dose of castor oil and laudanum, from half to a tablespoonful¹ of oil mixed with from three¹ to fifteen drops of the latter. About six hours afterwards, commence to give carbonate bismuth from five to twenty grains¹ every three or four hours, also two or three times a day give an enema of thick boiled starch (from one¹ to four teaspoonfuls), mixed with from three¹ to twenty drops of laudanum. The enema should be just warm, given very slowly, and the dog should be kept quiet for a short time afterwards, to prevent his ejecting it.

The following mixture may be tried, if the symptoms continue in spite of the bismuth:—

Recipe:

Chlorodyne	2 drachms.
Prepared Chalk	4 drachms.
Tr. Catechu	4 drachms.
Sol. Gum Acacia	4 drachms.
Water to	6 ounces.

Doses: From one teaspoonful to a tablespoonful¹ every three or four hours.

Diet: Feed on peptonized milk thickened with arrow-

¹ According to the size of the dog. See p. 81.

root (boiled), also give white of egg beaten up with water to drink, or barley water; no solid food should be given whilst there are any signs of blood with motions.

DYSPEPSIA: In conjunction with this article those on *Indigestion* and *Gastritis* should be studied.

Symptoms: Distention and discomfort after food, which is not eaten with usual relish. Action of bowels variable, sometimes constipated, at other times loose; occasionally vomiting after food. Tongue, instead of being of a nice pink colour, is brick-red. Dog drinks more than usual. There is loss of spirits and condition, and a disinclination to exercise.

Treatment: First give a purge, as from two to ten grains¹ of jalapine. Repeat dose in a week; outdoor exercise without fatigue. Also give following mixture:—

Recipe:

Bicarbonate of Soda	.	.	2 drachms.
Tr. Rhubarb	.	.	3 drachms.
Tr. Gentian	.	.	4 drachms.
Tr. Nux Vomica	.	.	1 drachm.
Liquor Bismuth	.	.	1 ounce.
Water to	.	.	6 ounces.

Doses: One teaspoonful to one tablespoonful¹ three times a day half an hour before food. After food give from one to five grains¹ of ingluvin after each meal.

Dogs suffering from dyspepsia should be treated for worms.

Diet: In bad cases, for a few days give peptonized milk or Benger's food, also milk mixed with equal parts Vichy water to drink; later feed entirely on lean raw meat for a time, given three times a day; if it is refused quite raw, try it lightly grilled. Well-boiled tripe, or sheep's brains boiled in milk, may also be offered; they are slightly relaxing.

¹ According to the size of the dog. See p. 81.

EAR-ACHE :

Symptoms: Shaking of the head, which is often held on one side; pain with or without pressure. There is generally an absence of discharge as in canker of the ear. Examine the cavity for foreign bodies, polypus, dirt, etc.; an ear speculum is necessary for accurate examination. Ear parasites (*Symbiotes canis*) are comparatively common.

Treatment: Steaming the ear with hot poppy-head tea gives relief, or a few drops of laudanum may be poured into the ear. The application of a hot salt or bran bag is relieving. If of simple origin such as cold, and water after swimming, the use of the aforesaid remedies and careful drying, removal of polypus by veterinary surgeon will soon put matters right; but serious damage to membrane or internal ear is much more serious.

EAR CANKER : *A meaningless term* used loosely by the average person for almost any ear trouble to which the dog is liable.

Otitis : Inflammation of the ear, of which there are two varieties, external and internal.

External, which is the most usual and applies to the canal of the external ear.

Internal, inflammation of the tympanic cavity, usually affecting internal coat of the membrane of the tympanum or drum of the ear.

Otorrhœa : Otitis when it has passed into a chronic state, when there is a purulent or muco-purulent discharge.

Causes: Want of cleanliness, removal of wax, dirt, etc.; water left in the ear after washing or bathing or after dogs have done work in water; otter-hounds or shooting-dogs working in streams or ponds. Attack of eczema implicating ears. Scratching with dirty feet aggravates the trouble.

Symptoms: Dogs of all kinds, especially those with long ears, are subject to this disease. The dog shakes

and scratches his ear; the parts are inflamed; he often holds the head on one side, and in most cases there is a thick brownish discharge. In many cases it assumes the form of or follows eczema, and dogs subject to this disease have attacks in the spring and autumn more often than at any other time.

Treatment: The following lotion should be applied two or three times a day with a camel's-hair brush to all the red parts, and also down into the canal as far as it will go. After twelve hours the ear should be cleaned out with some medicated wool twisted tightly round the point of a bodkin or manicure stick.

Recipe:

Oxide of Zinc Ointment	.	2 drachms.
Almond Oil	.	1 ounce.
Well mix.		

In addition to using the lotion, give the dog some cooling medicine, as from three grains¹ to one scruple of sulphate of magnesia, and half the quantity of bicarbonate of potash, twice a day with the food. The lotion and medicine should be continued as long as the dog shows any irritation of the ear.

In neglected cases of canker, ulcers form low down in the ear, causing a mattery, offensive discharge. In these cases different treatment is required. The ear should be syringed night and morning with a tablespoonful of methylated spirits added to half a tumbler of warm water, and then after letting the dog shake his head, the ear should be thoroughly dried with some medicated wool twisted around a bodkin, and then be filled with some finely powdered boracic acid. This is best done by the means of a quill attached to an india-rubber tube, the quill being filled up by being dipped into the powder, and then inserted into the ear, and deposited there by

¹ According to the size of the dog. See p. 81.

means of blowing through the tube. For bad cases use one part Xeroform powder to ten parts boracic powder.

Some of these cases are difficult to cure, but with perseverance they get all right in time.

There is another form of otitis due to an insect (*Symbiotes auricularis canis*). This is a very minute insect, which collects in large numbers in the canal of the ear, causing great irritation; the dog shakes his head frequently, and scratches the ear. The canal of the ear looks as if it were full of dry grey powder, but if looked at carefully it will be noticed to be full of very small insects, the size of tiny cheese mites, and they will be seen moving. This form of canker is contagious.

Treatment: Syringe the ear thoroughly with a teaspoonful of Jeyes' fluid added to six ounces of tepid water, then carefully dry, and anoint with the following ointment.

The syringing should be repeated about twice a week, and the ointment applied night and morning for a time.

Recipe: The Ointment:

Salicylic Acid	.	.	.	10 grains.
Vaseline	.	.	.	1½ drachms.
Carefully mix. Apply with camel's-hair brush.				

As it is very difficult to destroy the eggs of these parasites, it is advisable, even after the irritation has ceased, to continue the ointment two or three times a week for some time, so as to destroy the parasites as they hatch out of the eggs.

EAR: Hæmatoma or swelling containing blood or serum, under the skin, generally inside flap of ear; may be outside. Due to injury (traumatic), shaking ear against collar, kennel, etc.; breaks down the small blood-vessels between skin and cartilage.

Symptoms: Dogs with long ears are more subject to this complaint than others. It is generally caused by a

bruise of some kind. A swelling forms on one side of the flap of the ear; may extend all over the surface. It is very painful, and the dog will hold the head on one side, and cry out when touched.

Treatment: Often, if attended to *immediately* it occurs, the swelling may be dispersed by hot poppy-head fomentations, made by boiling a couple of crushed poppy-heads in a quart of water for ten minutes, and then straining; also at earliest stage painting with tincture of iodine a few times. If the swelling does not disappear in a couple of days, it should be freely opened on the inside at the lowest part—that is towards the point of the flap. The wound must be kept open by being plugged by a piece of lint, or inserting a small tube, which should be fixed in with a stitch. The wound must be kept open for some days, or else the fluid will collect again.

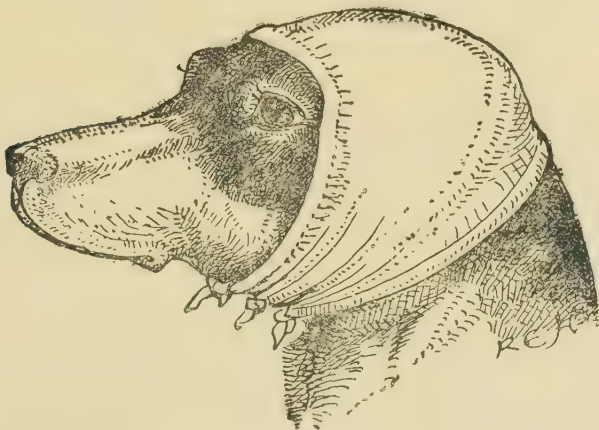
It is advisable in these cases to make the dog wear a cap as depicted in the illustration, and if the inside of the ear sweats at all, dust it freely with powdered boracic acid three or four times a day and keep a few layers of gauze between head and ear. A bandage over all may be necessary to tighten the cap sufficiently.

EAR, Growths in :

Symptoms: May be *polypi* or widespread *cartilaginous growths* in the canal of the ear, quite blocking up the passage. They cause great pain. The dog holds his head on one side, and is constantly scratching his ear and crying out.

Treatment: The treatment is to remove the polypi generally by torsion or by scalpel and subsequent application of a caustic (thermocautery), which should be done as follows: Chloroform having been given, the growth should be cut out as low down as possible with the points of probe-pointed scissors. Then the roots should be thoroughly scraped with a curette, and afterwards thoroughly cauterized with the thermocautery. The dog

suffers a good deal of pain for some days after the operation, but it may be relieved by pouring a few drops



A cap to keep the ears at rest when required. It should not be put on in cases of canker.

of the following lotion, which should be slightly warmed, into the ear three or four times a day:—

Recipe: The Lotion:

Laudanum	1 drachm.
Carbolic Acid	20 drops.
Almond Oil	1 ounce.

Carefully mix, and shake before using.

EAR-FLAP, Scurfiness of :

Symptoms: Very often dogs, especially those kept in kennels, suffer from a very scaly or scurfy condition of the edges of the flaps of the ears, which causes the hair to fall off, and the dog to shake his head frequently.

Treatment: Apply a little of the following dressing to the parts once or twice a day. This will remove the scurfiness, and stimulate the growth of the hair. Once a week wash the ears thoroughly with Cook's three per

cent. mercurial soap; rinse thoroughly and dry carefully. See the canal is left clean and dry.

Recipe: The Dressing:

Resorcin	.	.	.	.	1 scruple.
Cyllin	.	.	.	.	15 minims.
Almond Oil	.	.	.	.	1 ounce.
Mix.					

ECTHYMA :

Symptoms: A non-contagious, inflammatory, pustular, cutaneous disease occurring on any part of body (generally caused by dirty surroundings and debility, also poor food). The dog generally breaks the pustules by licking or scratching, and a running sore is produced.

Treatment: The part should be cleaned with a weak solution of Jeyes' disinfectant fluid, or with a teaspoonful boracic acid in half a pint of water, then gently dried with a soft cloth, and the following lotion applied and repeated often:—

Recipe:

Prepared Chalk	.	.	.	.	2 ounces.
Wright's Solution Coal Tar	.	.	.	.	$\frac{1}{2}$ ounce.
Lime Water to	.	.	.	.	8 ounces.

Well shake before using.

If sore parts persist, apply zinc ointment and prevent licking by using coat.

Treat dog for worms, and give following pills:—

Recipe:

Arsenious Acid	.	.	.	.	$\frac{1}{2}$ grain.
Reduced Iron	.	.	.	.	40 grains.
Sulphate Quinine	.	.	.	.	12 grains.

Extract Gentian, *q.s.*

Mix.

Divide into 12, 24, 36, or 48 pills.¹ One to be given twice a day, after food.

Dogs suffering from ecthyma should be given some meat every day mixed with other food.

¹ According to the size of the dog. See p. 81.

ECZEMA : A non-contagious skin disease, inflammatory, and of several different elementary types: erythematous, papular, vesicular, and pustular. (It is sometimes confounded with "scabies" or "mange", which is very contagious, and the parasite may be found in scrapings of the skin under microscope.)

Symptoms: Skin irritable; dog frequently scratching, also licking and biting himself. Clusters of fine vesicles appear at different parts; the skin afterwards becomes dry and scaly, unless the dog by constantly licking himself makes the parts sore and raw. Parts principally attacked around eyes, the lips, outside and inside of ears, along top of back, root of tail; but any part may become affected. With mange it constitutes about eighty per cent. of dogs' skin diseases.

Treatment: Bathe affected parts often with following lotion:—

Recipe:

Wright's Solution Coal Tar	.	.	1 ounce.
Goulard's Extract of Lead	.	.	1 drachm.
Glycerine Boracis	.	.	1 ounce.
Distilled or Rain Water to	.	.	8 ounces.
Mix.			

Or apply following ointment twice a day:—

Recipe:

Resorcin	.	.	.	.	1 scruple.
Creolin	.	.	.	.	20 minims.
Almond Oil	.	.	.	.	1 drachm.
Lanoline	.	.	.	.	1 ounce.
Mix.					

Apply night and morning.

When skin very sore and raw, dust the affected places often with following powder:—

Best Powdered Starch	.	.	.	4 parts.
Boracic Acid Powder	.	.	.	1 part.
Mix.				

When the eczema is general—that is, more or less all over the dog—give every four days a bath in Jeyes' disinfectant fluid diluted eighty times with tepid water; that is, four tablespoonfuls to a gallon of water.

Internal Remedies.—Treat for worms, and give the following powders:—

Reduced Iron	.	.	6 grains to 36 grains. ¹
Sulphate Magnesia	.	.	$\frac{1}{2}$ drachm to $\frac{1}{2}$ ounce.
Mix.			

Divide into 12 powders—one to be given twice a day with food.

When the dog is in poor condition, or when the skin is very dry and scurfy, try the following pills after the powders have been given for a time:—

Recipe:

Arsenious Acid	.	.	$\frac{1}{8}$ grain to $\frac{1}{2}$ grain. ¹
Reduced Iron	.	.	6 grains to 36 grains.
Ext. Gentian, <i>q.s.</i>			
Mix.			

Make 12 pills—one to be given twice a day.

Diet: Eczema being very largely a disease of mal-nutrition, it is necessary to give food that is easily assimilated. Avoid salt and any excess of starchy food, therefore give very few biscuits and principally meat, *raw by preference*. Laxatives are called for, therefore raw or very underdone liver is useful.

ELBOW, Capped :

Symptoms: The point of the elbow is hard, swollen, and tender, causing the dog to go lame, or at any rate rather stiff. It is generally the result of an injury, or lying on hard boards or bricks instead of soft bedding.

Treatment: At first try hot fomentations, which continue three or four times daily for some days; then apply the following lotion, dabbed on frequently:—

¹ According to the size of the dog. See p. 81.

Recipe:

Goulard's Extract of Lead	.	.	1 drachm.
Laudanum	.	.	1 drachm.
Spirits of Wine	.	.	4 drachms.
Water to	.	.	8 ounces.

Later, if the swelling continues, rub gently into the swollen part a little iodine vasogen once a day. Vetoid is the best form of iodine, but licking must be prevented. It is essential in these cases to keep a good soft bed under the dog.

EMACIATION :

Symptoms: Loss of condition, debility and wasting, often showing paleness of the mouth and conjunctival membrane. This is not a disease in itself but the result of abnormal conditions affecting the health and condition of the body in various diseases.

Treatment: First give medicine to remove worms; also cod-liver oil, from half a teaspoonful¹ to a tablespoonful two or three times a day after food, and from one to eight grains¹ saccharated iron two or three times a day.

Diet: Feed liberally, allowing plenty of raw meat, mixed with Spratt's malt and cod-liver oil biscuits; also give plenty of milk to drink. Tonics may be called for. (*See various prescriptions.*)

EMETICS :

The most effectual one is hydrochlorate of apomorphia; dose, from one-twentieth to one-sixth of a grain¹ in a teaspoonful of water. When given injected under the skin, it acts almost instantaneously (in two or three minutes). It is then mixed with twenty drops of brandy.

Tartar emetic, from a quarter¹ to one and a half grains, shaken dry on the back of the tongue. If vomiting should not be induced in about ten minutes, a few spoonfuls of warm water should be given.

¹ According to the size of the dog. See p. 81.

Ipecacuanha wine, from half a teaspoonful to a tablespoonful¹; repeated in ten minutes if vomiting not induced, and again ten minutes later if necessary.

In cases of emergency, common washing-soda may be given, a piece from the size of a small pea to large filbert-nut, according to breed of dog (administered like a pill).

EMPHYSEMA (Under Skin) : Very rare occurrence (traumatic).

Symptoms: The whole of the skin may become blown up like a bladder through a small puncture in the skin, which often cannot be found when a dog's coat is thick. The emphysema may be confined to the body or to the head, or even to one or more limbs. In bad cases the dog swells out of all recognition. He is unable to move, or does so with great difficulty; and when the head is affected, the eyes are closed, the ears perhaps an inch thick, and breathing is difficult. The swelling is soft, pits on pressure, and at the same time a crackling noise is made.

Treatment: In cases of general emphysema, if the swelling is not large it may be left alone, for it will gradually disperse of its own accord; but when it is large, the original wound, if it can be found, should be dilated, or one or more fresh ones made, and the air which has accumulated under the skin pressed out. The wound should afterwards be cleaned with a solution of some disinfectant like Jeyes' fluid or boracic acid, dried, then covered over with some antiseptic gauze, and a bandage or coat applied. Stimulants, as brandy, should be administered.

EMPHYSEMA, Pulmonary : When affecting the lungs, the breathing is heavy and laboured, and on auscultating the chest a distinct loud, crackling noise is heard. The heart is generally affected, its action, as a rule, being very weak; and there is a chronic, husky cough.

¹ According to the size of the dog. See p. 81.

Treatment: Is not very satisfactory, especially when the patient is very old, which is generally the case; but some relief may often be given by careful dieting. No food to distend the stomach should be allowed, as pressure on the chest from a distended stomach always increases the difficulty in breathing, therefore a concentrated food like meat should be given, and it is best raw. It should be given in small quantities three times a day.

Sedative medicine, unless the cough is very troublesome, is best avoided, but some such mixture as the following may be tried:—

Recipe:

Tr. Digitalis	.	.	.	1 drachm.
Tr. Nux Vomica	.	.	.	1 drachm.
Ipecacuanha Wine	.	.	.	2 drachms.
Water to	.	.	.	6 ounces.

From half a teaspoonful to a tablespoonful¹ three times a day one hour after food.

Inhalation of steam gives relief. No excitement; rest; no exertion.

The bowels should be kept well opened by occasional doses of aperient medicine.

ENEMA: *Enemata* are of various kinds and for various purposes: purgative, nutritive, sedative, stimulative, as a vermifuge, or for convulsions.

Purgative or *Laxative* enemas are necessary in cases of stoppage of the bowels; they are also very useful to relieve constipation; and for dogs that are very ill it is much better to give a small enema rather than a dose of purgative medicine; the latter often causes sickness, which one particularly wants to avoid when the patient is weak.

Merely to cause an action of the bowels in cases of constipation only a small enema is required as, say for a little dog like a griffon, half a teaspoonful of glycerine mixed with a couple of tablespoonfuls of warm water. For

¹ According to the size of the dog. See p. 81.

dogs the size of fox-terriers double the quantity may be given. For collies, etc., four times the quantity; and for dogs like a St. Bernard half as much again of both the glycerine and water. Instead of glycerine, soapy water may be used, or olive oil blood-heat (100 to 101 degs. F.).

In cases of real obstruction of the bowels, give double the quantities as advised in cases of simple constipation, and the enema should be repeated in these cases three or four times a day. Very often in cases of obstruction of the bowels it is a very good plan to give an occasional enema consisting of warm oil, or even from five grains to half a drachm¹ of ox gall dissolved in hot water.

For little dogs a straight glass ear-syringe may be used which can be bought to hold half an ounce or an ounce. For bigger dogs one of Higginson's enema syringes is the best. The bone point, before insertion into the bowel, should be well vaselined, and then it can be safely passed into the rectum its whole length, which is about two inches. Care should be taken when giving enema not to pump a lot of air into the bowel, which is obviated by filling the syringe with fluid before inserting the bone nozzle into rectum.

Another way of relieving constipation, when one wishes to avoid giving medicine by the mouth, is to pass a suppository made of glycerine and gelatine into the rectum. This has the advantage over enema of not wetting or messing the dog when the bowels operate, which is important in cases of paralysis when dogs cannot stand whilst passing a motion. Failing a glycerine suppository, a piece of yellow soap cut the shape of one answers the purpose, when vaselined.

Nutritive Enemas: Peptonized milk, beef tea, and eggs beaten up with these; from two to six ounces in case of largest breeds every four hours. Brandy can be added

¹ According to the size of the dog. See p. 81.

to above in cases of prostration from uterine hæmorrhage and in other cases. In cases of rectal irritation from five to twenty drops of laudanum may be added, but not given continuously.

Sedative Enema: Laudanum is the most useful; from five to twenty drops in boiled starch (from two to six ounces), according to size.

Stimulative: Brandy in warm starch as above, five to thirty drops as often as required at intervals of two to four hours.

Vermifuge: To remove worms from *lower* bowel: Copious enemata of water—blood-heat—a teaspoonful of common salt to the pint; use until returned. For retaining in position use as follows:—

Recipe:

Fluid Extract of Quassia	.	.	1½ ounces.
Water	.	.	2½ ounces.

Teaspoonful to a tablespoonful in double quantity of warm water; retain as long as possible.

For Convulsions: Puerperal (Eclampsia): Sometimes it is useful to give an enema in these cases when it is difficult by way of mouth; in *puerperal convulsions* give the following:—

Recipe:

Chloral Hydrate, from 5 to 30 grains in 2 to 6 ounces warm water.

Chlorotone is useful, but takes much longer to act.

ENTERITIS (Inflammation of the Bowels): Usually involving both small and large intestines, either acute catarrhal or chronic catarrhal.

Acute:

Causes: Improper or too much food, organic or mineral poisons, sudden changes in weather, certain nervous conditions, certain diseases as distemper, dysentery, septicæmia, tuberculosis.

Symptoms: Diarrhœa, thin watery motions, sometimes sickness and slight rise in temperature, quickened pulse, abdominal pain of a colicky character; these symptoms usually abate under treatment for *diarrhœa* and recovery can be looked for in a few days or a week. Appetite improves and dog more active.

Codein Sulphate	3 grains.
Bismuth Subnitrate	1 drachm.
Naphthalin	$\frac{1}{2}$ drachm.

Divide into 12 powders, half to one powder every three hours.

Three grains of salol may be substituted for naphthalin, but not continuously.

Chronic: This is more serious and more tedious than the acute form; cure is often difficult, being a matter of weeks instead of days. Temperature varies, sometimes high, but if in a state of collapse it is sub-normal. The chronic may follow the acute form; the causes are the same. The mucus discharge from bowel increases, even shreds of the membrane being passed, when it is called *membranous*: this lessens the likelihood of recovery. The pulse is quiet, though it generally becomes very weak as the disease advances. The appetite is not entirely gone, but is very bad, and what is taken is often vomited, mixed with a quantity of frothy mucus. When the food eaten is solid, and it is not vomited, then it generally passes through the patient in an undigested state with some mucus. The motions are copious and frequent, sometimes there is diarrhœa, at other times the motions are formed and hard. There is pain on pressure of the abdomen, and the coils of intestines may easily be felt as the coats of the bowels are generally much thickened—the result of the chronic inflammation. The patient becomes very anæmic and wasted, the breath is foul, ulcers may form in the mouth, and the tongue is of a rusty-red colour.

Treatment: In the acute form a small dose of castor oil mixed with from two to fifteen drops of laudanum,¹ and repeated in two or three days if necessary. If there is diarrhœa, give from three ¹ to fifteen grains of carbonate of bismuth three or four times a day; also from two to ten drops of chlorodyne ¹ in water three or four times a day; when there is much pain hot linseed meal poultices may be applied to the abdomen. The diet should consist principally of milk—plain or with Benger's food—a little meat juice may be added. Later, scraped lean raw meat may be given. Also see prescription.

The following powders to be given with or after food:—

Recipe:

Ingluvin	1 drachm.
Carbonate Bismuth	2 drachms.
Powdered Nux Vomica	6 grains.
Mix.	

Divide into 12, 24, or 48 powders ¹—one to be given three times a day.

The diet should consist principally of unboiled milk, given plain or with Benger's food, or beaten up with the white of an egg, and the quantity of course must vary according to the size of the dog, say from half a pint ¹ to two quarts a day. Later, when the motions seem normal and the condition of the tongue improves, scraped lean raw meat may be given in small quantities. Absolute rest and comfortable warmth.

EPILEPSY: Is a disease manifested by partial or complete loss of consciousness and by muscular convulsions. It is a *periodic* disease. The causes are still obscure. In dogs true epilepsy is not really common, but the convulsions are due in many cases to teething, worms in the stomach and intestines, shock or fright.

Symptoms: An attack generally occurs quite suddenly;

¹ According to the size of the dog. See p. 81.

dog falls uttering perhaps a loud cry, is violently convulsed, champs his jaws, and froths at the mouth, and is unconscious. The attack generally lasts about half a minute, when the dog looks around him in a sort of dazed condition, and then often bolts off, not knowing where he is going to. Often one attack is followed by more, so it is important that the dog should be put in a place of security as quickly as possible; a good-sized hamper is as good as anything. During the convulsions of epilepsy or just after, the patient unknowingly will bite his owner or anyone else, but there is no danger from such a bite as regards hydrophobia.

Treatment: During the convulsions, it is best to leave the dog alone, unless one attack is being quickly succeeded by another, in which case two ¹ or three drops of nitrite of amyl held to the nose, on a piece of blotting-paper, lessens the severity of the convulsions. Chloroform similarly applied answers the same purpose. Sedative enemata may be given in continued convulsions. Directly the patient is able to swallow, give a dose of hydrated chloral and bromide of potassium, from three ¹ to twenty grains of each, in from two teaspoonfuls ¹ to two table-spoonfuls of water. This may be repeated in one, two, three, or four hours, according to the necessity, and in any circumstances the bromide alone should be given three or four times a day for a week or so after the attack. When a dog has had a succession of fits, a long course of bromide of potassium will often effect a cure. Enemata of chloral hydrate are useful. (*See ENEMAS*, p. 97.)

Diet: Should be light, and consist principally of milk.

In all these cases, free purging does good.

In cases where the convulsions are continuously persistent in spite of all treatment, death may be expected.

EPISTAXIS (Bleeding from the Nose):

Symptoms: When the blood comes from one nostril,

¹ According to the size of the dog. See p. 81.

the trouble is generally local. When from both nostrils, it is more likely to be due to some lung mischief.

Treatment: If the hæmorrhage is not severe, nothing is necessary except keeping the dog quiet for a time, as it will soon discontinue. However, should the bleeding persist, cover the dog's eyes securely and syringe up the nostril a saturated solution of alum, or a teaspoonful of tincture perchloride of iron, mixed with a tablespoonful of water. In very severe cases, the local application of adrenalin should be tried, and from half to two grains¹ of ergotine, given subcutaneously, dissolved in a few drops of brandy. This may be repeated every three or four hours. In some cases it is necessary to plug the nostrils with strips of lint. When bleeding is severe, stimulants should be freely given, and also scraped lean raw meat; also plenty of milk or water to drink, or blood squeezed from raw beef, Valentine's meat juice in water.

ERYSIPELAS: Uncommon in dogs, but occasionally seen. Caused by the introduction into the skin of the streptococcus *Erysipelatis* or through the mucus membranes of mouth, nose, eyes, or parts adjacent to the lesions. Isolate the patient as well as the nurse.

Symptoms: Temperature quickly rises, and may go up to 106 or 107 degs. F., and even higher—dog constantly shivering—total loss of appetite, but as a rule thirst very great. Skin becomes thick, tense, and shiny—at first red, and then perhaps of a purple colour; blisters may form; affected parts much swollen.

Treatment: Give from two to fifteen grains¹ of chlorate potash every four hours; dust parts with powdered boracic acid, mixed with three parts of powdered starch. Allow stimulants. Tincture of chloride of iron two to six minims three or four times a day in water, or quinine half to two grains three times a day in water. Apply

¹ According to the size of the dog. See p. 81.

to affected parts twenty-five per cent. ichthyol ointment twice a day.

In cases where abscesses or gangrene develop, death may result.

ERYTHEMA :

Symptoms: Red and inflamed condition of the skin, the redness temporarily disappearing on pressure. Condition often noticed on inside of flaps of ears, inside of thighs and arms. It is accompanied sometimes by a good deal of burning and irritation which makes the dog lick and bite himself.

Treatment: Dust over with boracic powder often, or bathe parts with thymol lotion. Treat for worms and give sulphate of magnesia, from five¹ grains to one scruple, and reduced iron, from half¹ to four grains, twice a day with food. Make lotion:—

Recipe:

Liquor Carbo. Detergens	.	2 drachms.
Liquor Plumbi Sub. Acet.	.	2 drachms.
Aqua (Water) to . . .	.	8 ounces.

Apply to affected parts several times a day and prevent licking.

Diet: Meat may be given with other food in this case.

When the erythema is spread more or less all over the body, a bath every day or every other day made as follows gives relief:—

Recipe: Borax, two tablespoonfuls; fine oatmeal, eight tablespoonfuls; tepid water, three gallons.

It is a good plan when the dog is wet to rub the yolks of three or four eggs into the coat, which cleanses it, besides removing the dandruff from the skin.

EXHAUSTION (Result of great Exertion) :

Symptoms: The dog is very languid, and perhaps unable to stand; breathes heavily, pulse quick and weak. If very bad, the tongue and membrane of the eye

¹ According to the size of the dog. See p. 81.

may be of a dark blue colour, the result of defective circulation.

Treatment: Rest and stimulants, as from ten drops to two tablespoonfuls¹ of brandy in a little water, which repeat every half hour. When dog very bad and unable to swallow, the brandy may be injected under the skin. As the dog comes round, Valentine's meat juice or scraped raw meat in small quantities may be given.

EYE, Dislocation of :

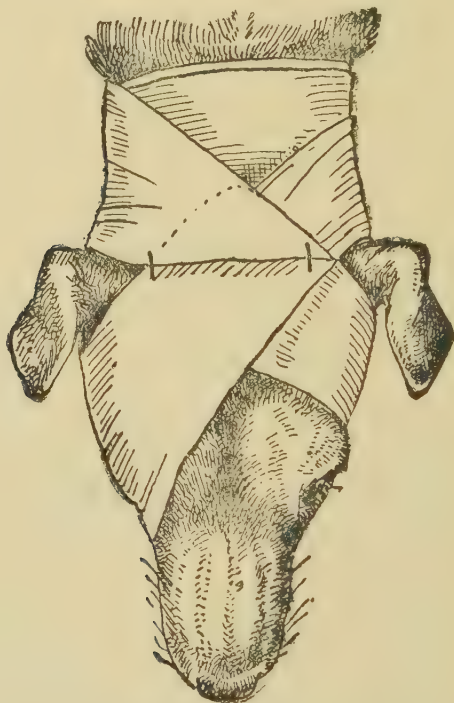
Symptoms: This is not an uncommon occurrence in dogs with prominent eyes, such as pugs, Japanese and Pekinese spaniels, as well as King Charles spaniels, and other such dogs. Generally it is caused by fighting, or from some sudden blow just at the back of the side of the eye.

Treatment: If attended to *immediately* the eye is easily returned, especially if a little castor oil be poured over the front of the eye, when with gentle pressure with the fingers it slips back into its place, and the eyesight is uninjured; but if left for some time, even for an hour, the eye becomes distended, and then it is impossible to return it without dilating the orifice. This must be done by making a small slit at the outer corner where the eyelids meet, say about one-eighth of an inch long, and then pouring a few drops of castor oil over the eye, return it with pressure. Afterwards carefully sew up the incision made, and either put a couple of stitches through the lids, so as to keep the eyelids closed, or else put a piece of lint double thickness, soaked in boracic lotion, over the eye, and apply a bandage; but it is much safer to put a couple of stitches through the external surface of lids so that the stitches do not rub the front of eye-ball; the stitches may be removed twenty-four hours later. The eye is sure to be inflamed and very painful for a few days, but this may be relieved by hot poppy-head fomentation made by boiling a couple of crushed poppy-

¹ According to the size of the dog. See p. 81.

heads in a quart of water for ten minutes, and then straining through fine muslin.

After the eye has been out for an hour or two, one



How to apply a bandage to cover one eye.

cannot tell for some days whether the sight has been destroyed or not. As a rule it is.

EYE, Haw of, Growth on :

Symptoms: A small red or white swelling appears in the inner corner of one or both eyes. It is particularly common in bull puppies, pugs, and young bloodhounds; it is often cartilaginous and under the haw or membrana *nictitans*; the haw is lifted after the application of cocaine and everted, removed as follows.

Treatment: The only treatment consists in excising the swelling in the following way: Paint the little body several times with a six per cent. solution of hydrochlorate of cocaine, then after waiting a few minutes the swelling should be gently drawn out with forceps, or by passing a thread through it with a needle, and then it should be quickly snipped off with a pair of curved scissors. The bleeding will stop of itself in a few minutes, and no further treatment is required except hot swab to the eye.

EYELIDS, Sore :

Symptoms: The membrane of the eye is much congested, and freely discharges white matter; the skin around eye is swollen, inflamed, and raw, which sometimes makes it difficult to see the eye.

Treatment: Apply following lotion often:—

Recipe:

Goulard's Extract of Lead	.	$\frac{1}{2}$ drachm.
Hydrochlorate of Cocaine	.	6 grains.
Distilled Water to	.	3 ounces.

Apply frequently with a piece of absorbent wool. When the skin is dry and inflammation less, anoint the lids three or four times a day with following ointment:—

Recipe:

Hydrochlorate of Cocaine	.	3 grains.
Water	.	1 drachm.
Lanoline	.	2 drachms.
Almond Oil	.	1 drachm.

Mix.

Give a dose of purgative medicine, also some cooling medicine with food, as from three to twenty grains¹ each of bicarbonate of potash and sulphate of magnesia.

FAINTING : Dogs subject to asthma often have a weak heart, and when the cough is severe frequently fall

¹ According to the size of the dog. See p. 81.

down in a faint, but as a rule it only lasts for a few moments, and the dog soon seems all right.

Symptoms: When due to loss of blood, the dog lies in an apparently lifeless condition, the mouth is white and clammy, the membranes of the eyes are bloodless, the pulse is quick and weak, and the breathing slow and laboured. The same condition occurs as the result of shock after an accident, as when a dog is run over, even when there is no internal bleeding.

Treatment: In the first instance, when a dog faints as the result of heart disease, the application of smelling salts to nose is generally sufficient at the time, but the condition that causes it requires attending to, and a course of some heart tonic should be given as the following:—

Recipe:

Tincture Digitalis	.	.	.	1 drachm.
Tincture Convallaria (Maj.)	.	.	.	1 drachm.
Water to	.	.	.	6 ounces.

From one teaspoonful to a tablespoonful ¹ to be given three times a day.

It is also a good plan to give a few drops of brandy in water after each meal, and the best food in these cases is underdone meat. In the second instance, as the result of hæmorrhage, let the animal lie perfectly quiet on his right side; if he can swallow, give small quantities of brandy and milk frequently; if this cannot be taken, inject under the skin from ten drops ¹ to a teaspoonful of brandy, in which has been dissolved from half ¹ to two grains of ergotine; or contents of small ampule pituitrin hypodermically; repeat in an hour or so. To make up for any loss of blood, inject slowly into the bowel from a tablespoonful to half a tumblerful ¹ of warm peptonized milk, which may be repeated in an hour. If

¹ According to the size of the dog. See p. 81.

very cold, place hot-water bottles to back. As soon as dog is able to swallow give Valentine's meat juice with water, alternately with milk and brandy, later small quantities of scraped lean raw meat, or blood squeezed from raw meat.

In the third instance, viz., fainting as the result of shock, without hæmorrhage, it is certainly difficult at first to know whether there is any internal bleeding or not going on, but in the absence of this the dog soon recovers. Brandy should be given as previously recommended, and smelling salts held to the nose.

FALSE PREGNANCY (Pseudocyesis) : This most often occurs in highly nervous, hysterical bitches which even after being properly served, though not in pup, become big and hard, and behave in every respect as if they were going to have a large litter, and at the end of the period of the supposed gestation, nothing but a little discharge comes away, and the bitch gradually gets smaller. There is an accumulation of milk, but this is a common occurrence seven or eight weeks after heat, even in maiden bitches. This may require to be removed, or the mammary glands rubbed twice a day with equal parts methylated spirits and warm water.

FALSE HEAT (Pseudo œstrum) : This sometimes occurs and is very misleading, as the bitch will generally allow of mating; the discharge may be, and generally is, normal in quantity and colour. When the heat is a false one the true period makes its appearance shortly afterwards (a week or month or more), when the bitch should be served again.

FAVUS (Form of Ringworm) : Isolate.

Symptoms: This is a form of ringworm which dogs often suffer from. It is frequently caught from mice, rats, or cats. It is recognized by circular patches covered with yellow sulphur-coloured crusts showing broken hair. As a rule, there is not much irritation of the

skin, but the disease is *very contagious, even to human beings*.

Treatment: The part should be painted daily with sulphurated calcium lotion. The lotion should not only be applied to the parts, but half an inch round the outer circumference of the patch. This should be continued for about a fortnight. Then dress the place daily for another week with a lotion of equal parts of methylated spirits, green soft soap, and oil of cade. Disinfect bed, collars, coats, basket, brushes, etc., with formalin candle in close-fitting box.

FEEDING: Dogs require concentrated food, and to keep a dog in the best condition, meat should form half his diet.

We take first the toy breeds. When puppies are weaned, it must be remembered that the mother's milk is far richer in fats and casein than cows' milk, and when possible, goats' milk should be given. To make cows' milk into the equivalent of bitches' milk in food values and consistence, take three small tablespoonfuls Plasmon, mix in five ounces cold water, then add three-quarters pint cold fresh milk; boil slowly for two minutes and *let stand until quite cold*. Then add three tablespoonfuls fresh cream and well mix. Warm this before giving to puppies.

ANALYSIS OF BITCHES' AND COWS' MILK

	<i>Cows'</i>	<i>Bitches</i>
Water	87.4	66.3
Fats	4.0	14.8
Sugar and Soluble Salts	5.0	2.9
Casein and Insoluble Salts	3.6	16.0

The mother should be allowed to feed her puppies during the night in the initial stages of weaning.

At five weeks old, puppies should be given a little scraped raw meat—very small quantities, a small egg-

spoonful once a day—and they should be treated for worms. As they get stronger, and are entirely weaned (at six to seven weeks), Bengers' food, a little rusk and broth, rusk and milk, and scraped raw meat, can be given alternately four times a day in small quantities. Directly the teeth begin to come through, one of Spratt's invalid biscuits should be given them to amuse themselves with. At four months old, the meals should be reduced to three in number, say, stale brown bread and milk in the morning, raw meat, or cooked meat, and stale bread in the middle of the day, and some puppy biscuit at night. At six months old, two meals a day will be sufficient, consisting of dry biscuit in the middle of the day, and at night a raw meat meal, twice a week; on other days, fine Rodnim or stale bread with broth, sheeps'-hearts or skirts, and other cooked meats, chopped up finely, mixed with it. Quantities and kinds at discretion.

Large non-splintering bones are very good for puppies to have once or twice a week, as this helps them during teething, and with dry biscuits, acts as the dog's tooth-brush. Bones of rabbits, fish, game and poultry should *never* be given.

Both in the matter of biscuits and meat foods, the greatest possible variety obtainable should be given. Sheeps'-heads and hearts, tripe, skirts, New Zealand mutton, bullocks'-heads and hearts, and fish (remove bones with care) all help to vary the dog's diet.

The same remarks apply to terriers and dogs of that size, but fine Rodnim, a little meat and broth, and less expensive foods will obtain the same results, as these dogs have stronger constitutions than the toys.

In the large breeds where size and bulk are required, two meat meals should be given the puppies from four to six months old, and those who have a plentiful supply of eggs will find that *raw eggs*, although costly, help to *increase growth*. The same number of meals should be

given as directed for the toys. When the puppy is full-grown, unless he is taking a great deal of exercise, hard biscuit and Rodnim, with about a pound of meat added, and broth poured over it, should be sufficient. Onions boiled with all these foods, and mashed up in the broth, will be found excellent. Other fresh vegetables should not be given, although lentils and rice are both good, especially when bowels are inclined to be loose.

FEET, Cracked :

Symptoms: The pads of some dogs are constantly cracking, especially in hot, dry weather. As a consequence, the feet become very tender, and in some cases the dog is quite lame when exercising on hard roads.

Treatment: Rub well into the pads night and morning some borate of glycerine. The loose horn should be removed with scissors, but not too much at a time. The feet affected can be kept in bags to prevent licking; they should be tied round wrists and ankles with broad tape which will not interfere with the circulation. Give the dog cooling medicine, from three ¹ to twenty grains of sulphate of magnesia, also from two ¹ to ten grains of bicarbonate of potash twice a day with the food. Exercise the dog for a time on grass.

FEET (Swelling between Toes) : Interdigital Abscesses: Caused by infection (entrance of dirt organisms through the sweat glands of those parts).

Symptoms: A swelling often suddenly forms between the toes, which makes the dog go exceedingly lame, and in fact he is often unable to put the foot to the ground. As the swelling increases in size, it soon becomes soft, and as a rule quickly breaks.

Treatment: Examine frequently dog's feet that are liable to this trouble, and immediately any thickening appears on the web-like structures between the toes paint both on top and underneath with tincture of iodine

¹ According to the size of the dog. See p. 81.

once a day for three or four days; if this is of no avail then a hot bread poultice should be applied, and repeated two or three times until the swelling is quite soft, and then it should be freely opened and the parts scraped out. The wound should be kept open for two or three days by packing it with a little boracic wool or carbolic gauze, otherwise if it heals too quickly it gathers again. The dog should have a dose of purgative medicine, and in chronic cases when the swelling keeps reappearing first in one foot and then in another, a course of arsenic should be given, as from one¹ to eight drops of liq. arsenicalis in from one¹ to four teaspoonfuls of water. Repeat the medicine twice a day, and give after food. It is sometimes necessary, in stubborn cases, to divide the webbing between the toes when opening the abscess and removing all intervening tissue; this disfigures the foot but no abscess forms again. Dogs subject to this complaint should be fed principally on dog biscuits. It is also a good plan to keep their feet thoroughly washed with Cook's three per cent. mercurial soap twice a week, rinsing out the soap after washing.

FEVER: This is a condition of the body characterized by an increase of temperature, shivering, lassitude, and loss of appetite; and, as a rule, is a symptom of some specific disease; but on some occasions it occurs as a result of some unascertainable cause, and generally in such cases the rise of temperature, which may go up to as much as 104 degs. F., is only temporary. This is more particularly the case in young puppies. This condition also occurs in dogs after exertion, especially when not in condition, as after a long walk on a hot day, or after a journey by car or train when not used to it; but when due to such causes, the temperature soon drops, and is normal in two or three hours, without any treatment. But if a dog, from whatever cause (ascertain-

¹ According to the size of the dog. See p. 81.

able or not), continues feverish, say over twenty-four hours, some medicine should be given to relieve it, such as from two¹ to ten grains of salicylate of soda, or from one-half¹ to five grains of aspirin; but this latter medicine should never be given to a dog in a low condition without following it with a dose of brandy with water, or, better still, have pills made as follows—

Acetyl Sal. Acid . . .	5 grains (Aspirin).
Caffein . . .	$\frac{1}{2}$ grain to 1 grain.

These will obviate any bad effect to the heart and can be divided for smaller doses, as there is always a danger of causing collapse by inducing heart failure. Either of these medicines may be repeated every four hours, but if after twenty-four hours the temperature still keeps more than two degrees above normal, then salicylate of quinine should be tried: doses, from one¹ to four grains given in a cachet, or made into a pill, and repeated once in six hours. There are occasions when no medicine seems to have any permanent effect upon the temperature, and in such cases the application of an ice-bag to the head intermittently for an hour or so is often of great advantage. A sheep's bladder or india-rubber sponge bag (a proper ice-bag is not expensive) makes a capital bag for small dogs. The ice should be broken in small pieces, and the temperature taken from time to time whilst the bag is on, so that one can see whether the temperature is going down or not, as it is *not advisable* to reduce it below normal.

FITS : See EPILEPSY, CONVULSIONS, ETC.

FLATULENCE (Simple) : The undue generation of gases in the stomach and intestines (flatus).

Cause: The principal cause of flatulence is fermentation or decomposition of the contents of the stomach and bowels, usually induced by embarrassed or debilitated

¹ According to the size of the dog. See p. 81.

function. A common symptom in dyspepsia. Constipation, gastritis, enteritis, liver disorders, intestinal obstructions are all causes.

Symptoms: Eructations, discomfort, restlessness after a meal, sometimes distention of stomach and intestines by gases (tympanites). When tympanites is too rapidly developed it overpowers the contractility of the hollow viscera (such as stomach and intestines), causing considerable pain; there may be vomition and diarrhœa.

Treatment: Easily digested food, avoiding starch, sugar, green vegetables, warm liquids. Pepsin or ingluvin after meals promote digestion; wood charcoal with meat food helps to absorb the gases (one or two scruples). Capsules of cyllin for distention are useful in bad cases of Tympanites, but are not commonly called for in simple flatulence.

Recipe:

Tincture of Rhubarb	.	.	4 drachms.
Bicarbonate of Soda	.	.	2 drachms.
Tincture Nux Vomica	.	.	1 drachm.
Liquor Bismuth	.	.	4 drachms.
Water to	.	.	6 ounces.

Half to four teaspoonfuls two or three times a day *after* food.

Recipe:

Bismuth Salicylate	.	.	4 drachms.
Magnesium Calcinate	.	.	4 drachms.
Powdered Wood Charcoal	.	.	6 drachms.
Oil of Anise	.	.	2 drachms.

Half to one teaspoonful *before* meals.

Aperients and enemas are often required in stubborn cases, but sometimes suppositories suffice.

FLATULENCE (Severe) with Tympanites (Distension): (Read article on SIMPLE FLATULENCE before reading this.) The symptom sometimes called

“drum-belly” in human practice; because of the abdomen being so tensely distended by air or gas, it sounds like a drum on percussion. (From the Greek word *tympanon*, a drum.)

This is a severe and very serious form of flatulence; more correctly called “Tympanites”, because of the persistent presence of quantities of gas both in the stomach and intestines; this shows itself in the larger breeds more than in small dogs: bloodhounds, foxhounds, mastiffs, etc., etc. In the past it has been answerable for the painful deaths of large numbers of valuable dogs, and as prevention is better than cure I shall dwell largely on that side of the question, both in explanation and treatment. As is well known, those troublesome bacilli called *Bacillus colli communis* are always present in the intestines of healthy creatures and do no harm if in limited numbers; but when a condition of considerable fermentation and (or) decomposition of the contents of the stomach takes place, an enormous increase in the numbers of these bacilli is induced, and when this condition is added to an exceptionally heavy meal the amount of gas generated is equally exceptionally great, so much so that in some cases the stomach has been ruptured.

Symptoms: The attack usually comes on soon after a meal; restlessness, quick breathing, the abdomen increases in size rapidly, becomes tense and on percussion gives a drum-like (tympanic) sound, the eyes are congested, the pulse is one of pain, rapid and wiry, the patient has an anxious look—as well he might—the pain and the distension increase. Unless relief is prompt, collapse follows from pain, shock, temperature, and perhaps rupture of the stomach; if the dog lives long enough peritonitis is set up from the ruptured organ.

Preventive Treatment: Never give heavy meals; give dry meals in preference to moist or wet, as they ensure

more mastication and slower ingestion. Feed the dogs separately so that they do not eat so voraciously or quickly; do not give such food as paunches in a raw state, and not only thoroughly cleaned but very thoroughly cooked. Horse-flesh must be chosen with the greatest care—if used at all—and cooked thoroughly. (After losing one or two hounds I gave up using it altogether. F.W.C.)

Dose perfectly healthy hounds from time to time with two minim capsules of "Cyllin" after each meal for three or four successive days. Give Condyl's fluid occasionally in drinking water—enough to make it *just* magenta in colour—most dogs like it and in hot weather it is a safe internal disinfectant—once a week; avoid constipation. Never give a meal immediately after heavy exercise; allow an hour's rest.

Recipe:

Extract Nux Vomica	.	.	.	3 grains.
Extract Physostigma	.	.	.	2 grains.
Asafetida	.	.	.	40 grains.

Make 24 pills; one night and morning.

Medicinal Treatment: Immediately the first sign of tympanites shows itself give a hypodermic injection of one-tenth of a grain of apomorphia in twenty drops of brandy under loose skin over ribs (after rubbing seat of injection with iodine); this induces sickness in a couple of minutes and empties the stomach; give enema of hot soapy water to empty lower bowel. When sickness has ceased, give two or three (two minim) capsules of "cyllin" for dog bloodhound size, and follow with one capsule in an hour or two if the symptoms of distension and pain are subsiding. If after the first dose the conditions increase in intensity, then give aromatic spirits of ammonia, *thirty drops* in warm water, and repeat hourly; or if this cannot be obtained, give dessertspoonful brandy in two tablespoonfuls of hot water, repeating as before.

Use the prescription above if symptoms are relieved, together with wood charcoal powdered.

An operation may be necessary in extreme cases; it consists of abdominal section opening the stomach to evacuate gas, but preventing other contents of stomach escaping. The large lower bowel might require similar treatment; both stomach and intestines require careful suturing and abdominal wall also.

The success of treatment, including operation, entirely depends on promptness, and in this malady delays are indeed dangerous and mostly fatal.

FRACTURES: Fractures of the different bones of the limbs, also of the body and head, are very common in the dog, especially in the first-mentioned parts. X-ray before and after setting limb.

Symptoms: The symptoms of a fractured part are deformity, pain and swelling at the seat of fracture, with crepitus or grating together of the broken ends of the bone when the parts are moved. There are three kinds of fractures. Simple, when one or more bones are broken in two pieces, as in fracture of the two bones—radius and ulna—of the fore leg or arm, and an absence of serious injury to the skin. Compound, when besides fracture of the bones, the skin and other tissues are torn, exposing the bones; and comminutive, when a bone is crushed into several pieces. It is, of course, possible to have a compound comminutive fracture. There is a false form of fracture that occasionally occurs in puppies, especially of the larger breeds, more particularly when affected with rickets; that is, the separation of the epiphyses from the shaft of the bone. The epiphyses are the ends of the long bones, and in young animals they are joined to the main shaft by cartilage; later this becomes ossified or converted into bone.

Fracture of the Metacarpal and Metatarsal Bones: They are the bones running from the knee and hock to the

toes respectively; one or more of these bones may be broken at a time.

Treatment: With the fingers bring the broken ends of bones together, and in the case of the fore leg apply a thin wood splint to the front of the leg, from just above the toes to an inch or more above the knee, according to the size of the dog. The splint should be made of thin wood, like that put to the back of pictures, and the part coming next to the leg should be padded with a thick layer of wool which is best kept in its place by winding a piece of bandage round it. In cases of fracture of the metatarsal bones, the splint should be taken from the foot to the point of the back of the hock. In either case, the splint must be kept in its place by the application of a thin bandage, wound several times round the leg, commencing (always) from the foot and working it upwards and then downwards several times.

In treating fractures, it is important to get them set and bandaged before the parts have had time to swell, otherwise in a few days when the swelling has disappeared, the bandage will be found loose and perhaps come off, necessitating resetting and bandaging. When the setting has been properly carried out, there is no occasion to remove the bandages in cases of simple fracture, at any rate for a month; but if the splints have not been properly padded, they may rub the prominent parts of the joints or bones, causing bad wounds. When this is occurring, the dog is restless, and shows unmistakable signs of discomfort by constantly licking the parts; then the splints and bandages must be removed, and the sores washed and dressed by sprinkling the wound over with powdered iodoform before applying the splints and bandages again. The wound may require dressing every other day, or even daily if it is a bad and deep one; in these cases a pad of some antiseptic gauze, as carbolic gauze, should be applied.

Fracture of the Radius and Ulna: It is very seldom indeed that one of these bones alone is broken; if one goes, the other does. They form the arm; that is, the fore leg from elbow to the knee.

Treatment: In these cases four padded splints should be applied—one on each side, one at the back, and one in front of the leg. The one in front must be shorter than the side ones, so as not to rub the front of the elbow joint or the toes, and the one on the inside of the leg should be slightly shorter than the one on the outside. One, two, or three six-yard thin bandages must be fairly firmly applied, commencing right down at the foot and carried up over the elbow joint.

It is a good plan to apply a few strips of Mead's plaster over the bandage; it keeps it from slipping.

Fracture of the Lower Extremity of the Shoulder Bone, and Humerus: These fractures in the elbow joint almost always consist of a breaking off of the inner condyle of the humerus, and as a consequence the limb becomes shortened.

Treatment: These cases cannot be cured, and it is best not to bandage them; in fact, they are best left to Nature, for whatever is done, the dog remains always lame, but after a time he adapts himself to circumstances, and makes good use of the shortened leg.

Fracture of the Humerus: This bone may be fractured through the shaft.

Treatment: It is a somewhat difficult bone to set, as it is situated so close to the body that it is not easy to put a bandage round; but a splint made of poro-plaster may be moulded to the bone, and kept in its place with one-inch wide strips of Mead's plaster. They should be cut about six inches long.

Fracture of Scapula or Blade Bone:

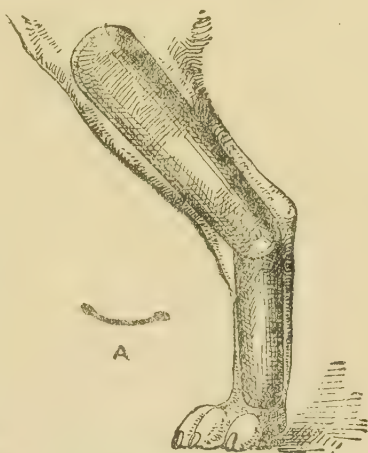
Treatment: These fractures should be treated by fixing with hot pitch an oval piece of thin, pliable leather, large enough to just more than cover over the bone.

Fracture of Hock: Sometimes, as the result of being run over, the bones of the hock become broken, and as a consequence a stiff joint results.

Treatment: A similar splint as illustrated, the same that is recommended for fracture of the tibia, should be applied.

Fracture of Tibia: This bone extends from the stifle joint to the hock, and is often broken when a dog is run over across the hind leg.

Treatment: A splint made of thin zinc, as depicted in illustration, is the most suitable for these cases; it must be well padded. When the patient is a big dog, it is advisable to have two splints, one on either side of the leg. They should extend from the foot to the stifle joint or just above.



A splint with a joint for fractures of the back leg.

Remember that X-rays are a certain guide to the nature of a fracture, both before and after treatment, as portrayed in picture of X-ray Department at my late Surgery.—F.W.C.

The illustration shows a joint in the centre of the splint, but this is not absolutely necessary, though it has its advantages. One is, the joint does not become so stiff, as it allows just slight movement.

Over the bandage a few strips of Mead's plaster should always be used to prevent the bandage shifting.

Fracture of Femur (Thigh Bone):

Treatment: Except in cases of fracture of the lower

extremity, these cases are difficult to treat, in consequence of the shape of the leg, for one thing; and for another, the limb is so close to the body that a bandage cannot with advantage be put round. Under these circumstances, it is always best in cases of broken thigh, except when it occurs at the lowest extremity—that is, just above the stifle joint—to leave it to Nature, who, as a rule, makes a very good cure, except that the leg as a result may be a little shorter than its fellow. The muscles around the bone are so thick and strong that they take the place of bandages, and keep the bone in its place; whereas when a bandage is applied, it does harm, and as a consequence the bone seldom unites. At the lower extremity it is different; the muscles here are not so thick, and the application of a splint and bandage supports the broken bone. The best form of splint is one similar to the kind recommended for fracture of the tibia, but made to extend nearly to the top of the thigh. To fix this splint in its place, an ordinary bandage should be applied nearly up to the stifle joint, and then above this the splint is to be kept in its place by means of strips of Mead's plaster, as a simple bandage cannot be kept on the thigh in consequence of its shape and position.

Fracture of the head of the femur occurs sometimes, especially in puppies, and is often mistaken for dislocation of the hip joint, of which I have never seen a case. The part that is really broken is the neck of the ball of the head of the femur, which fits in the cup of the pelvis that goes to form the hip joint. In these cases great pain is caused by pulling the leg back or abducting it, and distinct crepitation may be felt and heard when moving the limb. If there is any doubt about the case, the exact condition of the parts can always be plainly seen with the assistance of the X-rays.

After fracture of the neck of the head of the thigh bone, the top of it—namely, the trochanter—sticks up

higher than it did before, and this will be particularly noticed if the injured joint is compared with the corresponding one on the other side.

Treatment is useless in these cases, for the broken bone will never unite again; but in time a false joint is formed, and though the limb will for ever afterwards be shorter than its fellow, yet after a time it becomes a very useful member, and the dog scarcely walks lame at all, except perhaps after some unusual exertion, but the muscles never develop to the same extent on the injured side as they do on the sound one.

In treating small dogs with fracture of the legs, it is very important that the bandages should be as thin and light as possible. In these cases have bandages made of thin muslin or butter cloth about one and a half inches wide and four yards long, which soak in a thick solution of gum acacia. This is put straight on the broken leg after it has been set straight. A good many layers may be put on, and over this four thin *unpadded* splints are adapted, and then a few layers of ordinary bandage to keep the splints in their place, and they with the outside bandage may be removed in a couple of days, by which time the gum has dried and set firmly.

Fracture of Pelvis: Different parts of the pelvis become fractured as the result of accident, generally from a dog being run over.

Symptoms: The dog goes very lame, in many cases with straddled legs, and often for a time may not be able to walk at all. There is a good deal of pain on manipulation and swelling of the fractured parts.

Treatment: The dog for a month or so must be kept very quiet, and a jacket placed on the hinder parts assists in keeping them together.

In all cases of fracture, it is most important that the dog be kept absolutely quiet for the first three weeks; if the dog must go out for certain purposes, then he

should be carried to a garden and back again. If this is not attended to, the broken bone will not unite, and as a consequence there is what is called a false joint formed—that is, a soft union between the two broken ends of the bone—and as a result the dog is never able to bear weight on the limb, and it is never straight.

In cases of comminutive fracture, the same treatment is required as for simple fracture, but more time must be given for union to take place.

Compound Fracture is more difficult to treat as the limb cannot be set up permanently, as it is necessary to dress the wound daily, or at any rate every other day for a time, and this disturbs the leg and interferes with the mending of the bone. Before setting the limb in these cases, the wound must be thoroughly cleaned with some antiseptic solution, as Jeyes' fluid, one in eighty parts of tepid water, or a solution of chinosol, one grain to the ounce of water. All pieces of exposed loose bone must be removed, and pieces of bone sticking through the wound that cannot be put back must be sawn, or nipped off with bone forceps. Then the limb, after being put in a natural straight position, should be enveloped in several layers of some antiseptic gauze, before applying the padded splints in the usual way. It is advisable, if possible, not to place a splint over the wound, so that by cutting a hole through the bandages one may expose the wound in the skin, which can be done when it is small; it can be daily dressed without removing the whole of the bandages every day, though it is necessary to do so once a week, as the dressing becomes soiled with the discharge. The hole made in the bandages must be kept packed with disinfectant gauze, as iodoform or carbolic gauze, which must be changed daily.

Fractures of Bones of the Tail are best treated by setting up the tail with strips of Mead's adhesive plaster. Many layers must be applied so as to keep the parts at rest.

Adhesive plaster is advised, as it is almost impossible to keep a bandage on the tail unless pitch or some other such material is used, and this makes the dressing very heavy and uncomfortable for the patient.

Green Stick Fracture: That is when a bone is broken, and the parts are not displaced.

Symptoms: These cases are sometimes difficult to diagnose; but the parts are swollen and painful, and the dog is unable to put the foot to the ground. With the aid of the X-rays the fracture is easily discernible. The bone which I find by experience most liable to this form of fracture is the radius or fore arm.

Treatment: The same as for cases of simple fracture. It soon unites, and the leg becomes strong again.

Broken Back, which occurs sometimes as the result of a dog being run over; the part that generally breaks is across the loins—lumbar vertebræ—well forward close to the dorsal vertebræ.

Symptoms: Acute pain at the part, some swelling of the soft tissues covering the injured vertebræ, and loss of power and feeling of the parts behind the injury.

Treatment: Useless; it is much the best to have the dog at once put out of his misery.

Fracture of the Cervical Vertebræ or Bones of the Neck may occur from a dog being run over across the neck. Death, as a rule, quickly occurs. There is nothing to be done.

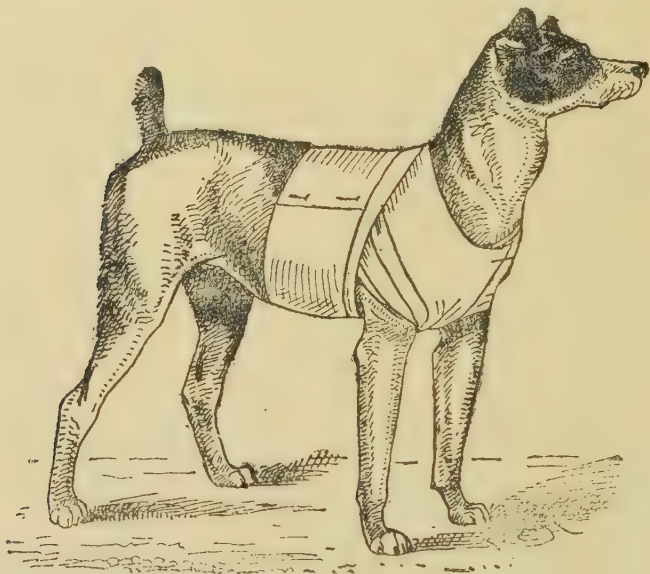
Fracture of Ribs: This is not an uncommon occurrence.

Symptoms: Pain at the seat of injury, and some local swelling. The fractured rib can easily be felt, and there is some crepitation when manipulated. The broken ends of the rib are inclined to turn inwards.

Treatment: Place a fairly wide linen bandage, or, what is better still, some wide strips of Mead's adhesive plaster, round the chest. Union, as a rule, of the broken rib soon takes place.

Fracture of the Bones of the Skull, especially those of the forehead, occasionally occurs.

Symptoms: The broken bone will be generally found depressed; the part is very painful, and swelling soon occurs. This injury is often accompanied by a good deal of acute congestion of the brain, the result of concussion,



Showing how to bandage a dog's chest for fracture of ribs and other injuries to the chest.

and as a result the dog often becomes unconscious soon after the accident. This may continue for days, or until the pressure, the result of the fractured bone on the brain, is relieved by operation. The dog, of course, during the unconscious condition is quite paralysed in all four limbs. After the pressure is removed, the dog soon regains consciousness, and strength gradually returns to the limbs.

Treatment: In these cases it is important to keep the

dog absolutely quiet; feed him on liquid food, carefully given with a spoon or bottle, in small quantities often. When the patient is very restless, an ice-bag may be applied to the forehead, and small doses of bromide of potassium given every four hours mixed with the food. When the fractured bone is depressed, and is pressing on the brain, the sooner this is relieved by operation the better. Of course, for some time afterwards the dog must be kept very quiet.

Fracture of the Upper Jaw: This occasionally occurs as the result of a blow, as the kick of a horse; also from being run over.

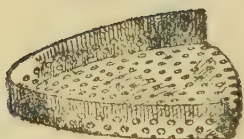
Treatment: A bandage cannot be easily applied here to any advantage. If the mucus membrane has been torn, and the bone exposed, all loose pieces must be removed, also broken and loose teeth; and the mouth should be thoroughly washed out three or four times a day with a teaspoonful of borax to half a pint of water, and the dog fed on sloppy food for a time.

These cases, as a rule, do very well.

Fracture of Lower Jaw: This is not an uncommon occurrence, as the result of the same causes as fracture of the upper jaw.

Treatment: The removing of loose bone and teeth is to be carried out in the same way as recommended in cases of broken upper jaw; but here a splint can be applied, and is necessary, as there is not the same natural support as there is in the upper jaw. Of course, there is some difficulty in applying a splint and bandage in these cases to dogs with a very short face, especially when the patient is very small—as, for instance, a griffon—and moreover, it is not quite so necessary, as there is more natural support in a short jaw than a long one, like a terrier's or greyhound's. The splint should be made of perforated zinc, and of the shape depicted in the illustration, and be applied as well as the bandages, as depicted in the

illustration. The bandages must be put on sufficiently tight, so that the dog cannot open the mouth. There are cases when a dog will not tolerate a splint and bandages; in such instances, the broken ends of the



A splint for fracture of bottom jaw.

bone must be brought firmly together with a strong silver wire suture, and fastened by twisting. The dog's strength in these cases must be kept up with milk and raw eggs, beaten up together; also milk and Benger's food or sanato-gen, as well as beef tea, as it is necessary that the splint and bandages be kept on for at least three weeks, and even after this nothing but sloppy food must be allowed for a time.

GALL-STONES:

Symptoms: Acute abdominal pain, and great tenderness of the abdomen; if relief is not soon given jaundice follows.

Treatment: To relieve the pain, give five¹ drops to a teaspoonful of laudanum in a teaspoonful¹ to two tablespoonfuls of water. If pain continues, the medicine may be repeated in an hour, and again an hour later if necessary. Hot linseed meal poultices should be applied to the abdomen. If jaundice follows, give from three¹ to ten grains of the homœopathic preparation of merc. sol. 3 x every three hours for three or four days.

¹ According to the size of the dog. See p. 81.

Under the best circumstances treatment can be of but temporary benefit, except by operation and generally by extirpation of gall bladder.

GANGRENE :

Symptoms: This may follow improper treatment of a severe wound, and also result from a too tightly bandaged leg in a case of fracture, or as I have seen, from an elastic band being placed on the leg, or in some cases on a dog's tail. The elastic band frequently sinks into the tissues and may become completely embedded; the part has to be opened under an anæsthetic for removal. The parts are at first very swollen, painful and red, later skin turns blue or even black. Skin oozes very offensive blood-coloured fluid; later the pain disappears from the part, and it becomes cold and clammy, and turns green; in fact, the part dies (necrosis).

Treatment: If from the too tight application of a bandage, or from an india-rubber band, it should at once be removed. Apply hot linseed meal poultices, dusted over freely with charcoal, every four hours, and then the parts should be freely washed with a warm saturated solution of boracic acid, carefully dried and wrapped in carbolic gauze, and a bandage lightly applied. As a rule, there is a good deal of constitutional disturbance in these cases, and it is advisable to give some medicine such as salicine, say from three ¹ to fifteen grains every six hours, either in tabloid or cachet, also stimulants as brandy.

GASTRIC ULCER :

Symptoms: Dogs suffering from this disease are occasionally seen bringing up their food, sometimes tinged with blood, which is generally of a bright red colour. The quantity of blood varies. Sometimes there are streaks mixed with vomited matter, or there may be quite a quantity, causing great exhaustion. They also lose condition, become anæmic and languid.

¹ According to the size of the dog. See p. 81.

Treatment: The principal thing in these cases is diet, which should be light and of an easily digested nature, as milk with the white of egg, or milk thickened with Benger's food. When the dog is very weak, a little Valentine's meat juice should be added with each lot, but nothing solid. When the bleeding is severe give ergotine, a half¹ to two grains every two or three hours, in a teaspoonful¹ to a tablespoonful of water; when it is very slight the styptics are not necessary, but give the dog each time a quarter of an hour before food from two¹ to ten grains of carbonate of bismuth, and immediately after food from one¹ to five grains of ingluvin. It is necessary in these cases to keep the dog absolutely quiet. Do not allow the dog to drink a lot of water; if very thirsty, give Vichy water and milk in equal parts to drink, as plain water increases the vomiting, or give ice to lick. Nutrient enemata or suppositories may be given.

GASTRITIS (Acute) :

Symptoms: Frequent and violent vomiting, diarrhœa. The attack is accompanied by great thirst.

Treatment: Keep the dog quiet, and prevent him drinking water. If he is very thirsty, give Vichy water and milk to drink in equal parts, or ice to lick. Give every four hours from three¹ to ten grains of carbonate of bismuth shaken dry on the tongue. If this does not stop the sickness, give the mixture as recommended for Specific Gastritis. In some cases the sickness is so acute that if every care is not taken the dog dies from exhaustion. In such instances the dog's stomach should be given absolute rest, the dog not being allowed to drink even water, or have ice, say for six to twelve hours. In these cases the mouth must be swabbed out every hour with Vichy water. To keep the dog's strength up, give a peptonized beef suppository every three or four hours.

¹ According to the size of the dog. See p. 81.

If there is any diarrhœa, give an enema of a dessert-spoonful to two tablespoonfuls¹ of milk, thickened with starch, with from five¹ to twenty drops of laudanum added, every four or six hours. When the sickness has stopped, food must be given very sparingly by the mouth, and should consist of peptonized milk or milk and Vichy, and just a small quantity of Brand's jelly, every hour or so. After a couple of days, if the dog is doing well, a little scraped lean raw mutton may be offered.

GASTRITIS (Chronic) :

Symptoms: In this complaint the dog occasionally vomits, bringing up his food, is very thirsty, and loses condition. The tongue, instead of being a nice pink colour, is brick-red colour and dry, and occasionally diarrhœa occurs.

Treatment: For this a diet of raw meat for a time will put the dog right, a small quantity three times a day; and an hour before each meal give from three¹ to fifteen grains of carbonate of bismuth. In very obstinate cases, small doses of arsenic, as from half¹ a drop to two drops of Fowler's solution, with from two¹ teaspoonfuls to two tablespoonfuls of water, given before food, does good.

GASTRITIS (Specific): "Stuttgart Disease": Hæmorrhagic Gastroenteritis (Dog Typhoid):

Symptoms: This is a contagious disease which has been prevalent amongst dogs of late years. It is sometimes miscalled German distemper, and often terminates fatally. It generally commences by the dog showing malaise, being drowsy, disinclined to eat as usual or take his exercise, thirst increases, temperature often rises, sickness commences; there is the typical, deadly smell to the breath due to the bacillus of necrosis; teeth highly furred; ulcers often form on the tongue, along the edge of gums, and inside the cheeks. There is great wasting. As the

¹ According to the size of the dog. See p. 81

disease progresses, the vomiting increases, the dog often bringing up blood or coffee-coloured, offensive fluid; also dysentery is present. Unlike ordinary gastritis, there are generally two or three degrees of fever, but the temperature soon falls below normal, and the pulse from the commencement is rapid, whereas in ordinary gastritis there is seldom any rise in temperature or alteration in the number of the pulse-beats. A very characteristic symptom of this disease is a very congested condition of the eyes. In severe cases I have known the spatulate part of tongue to slough off and even then to recover; the dog then drinks like a horse by putting the end of his face right into the water and drawing it up, so that a deep bowl must be supplied and kept filled.—F. W. C.

Treatment: The dog must be kept exceptionally quiet, and prevented from drinking any water, as it only irritates the stomach. A liquid diet is absolutely necessary, such as Vichy water and milk in equal parts to drink, milk and white of egg or Benger's food, and occasionally a little Brand's beef essence. For medicine, give from *one¹ to five drops of cyllin*, which is best *given in a gelatine capsule, three times a day*. If the vomiting is very severe, the following mixture can be given:—

Recipe:

Diluted Hydrocyanic Dil.	.	.	24 drops.
Liquor Bismuth	.	.	3 drachms.
Water to	.	.	3 ounces.

Doses: From a half¹ to two teaspoonfuls every three or four hours.

Keep dog's body warm (not uncomfortably hot), also feet; room must be kept ventilated. Good nursing is a great asset.

It is very important to keep the mouth scrupulously clean. For this a lotion of permanganate of potash may be used, five grains to a tumbler of tepid water. If

¹ According to the size of the dog. See p. 81.

ulcers form, apply sparingly night and morning five per cent. solution of bromic acid. There is always a danger of relapse in these cases if a solid diet is permitted too soon. The liquid diet should be continued for at least a week after the dog seems apparently well.

GLANDULAR ENLARGEMENT :

Symptoms: The glands about the throat are subject to swelling from cold; also they may become enlarged when some injury resulting in inflammation has taken place in the neighbourhood of the neck. The lymphatic



A many-tailed bandage. A useful way of applying a poultice or dressing to the upper part of the neck.

gland, situated at the lower part of the neck, just in front and to the inside of the shoulder-joint, is much subject to enlargement and the formation of tumours. Another favourite situation for similar enlargements or growths to occur is the lower part of the abdomen (pubes), between the hind legs, just above and on each side of the sheath of the penis. Enlargements of the lymphatic gland, on the inside of the elbow-joint, occur in cases of cancer of the breast.

Treatment: When from a cold, as enlargement of the throat glands, use following liniment:—

Recipe:

Colourless Tincture of Iodine	.	4 drachms.
Spirits of Camphor	. . .	1 ounce.
Soap Liniment to	. . .	3 ounces.

A little to be gently rubbed into the swelling night and morning.

When enlargement of the sympathetic glands occurs, the result of some inflammation going on in the neighbourhood, no special treatment is required, as the condition will cease as the inflammation subsides. The tumefied glands, when situated near the front of shoulder, also under arm or in the pubic region, may be treated with iodine vasogen for a time, but any treatment except an operation is unlikely to be successful.

GLANDULAR ENLARGEMENT (Lymphadenoma) : (Hodgkin's Disease) :

Symptoms: This is a serious disease, and often affects all the lymphatic glands of the system, external and internal, which become much swollen and painful. The glands under the jaw are generally the first to show the disease, and they often increase from the size of a bean (normal size) to that of a walnut. The popliteal gland is also early in showing an enlargement, behind the lower part of thigh muscles above the hock. The disease extends to the other glands, as those in front of the shoulders; also those under the arms. Those at each side of the penis, the back of the hind legs, and even the glands situated in the abdomen are affected.

Treatment: Is seldom attended with success; but occasionally large doses of iodide of potassium, from one to ten grains,¹ well diluted with water, seem to retard the progress of the disease for a time. Removing the diseased glands by operation is not of any use, and often impossible. Iodide of arsenic is used, also arsenic and iron. Recovery is rare. Radium in early cases. A course of Neokharsivan (B. W.) under strict professional supervision has been of some help, but only in the early stages.

GLAUCOMA :

Symptoms: The white of the eye is very red, and the ball is distended and painful on pressure. The eye loses

¹ According to the size of the dog. See p. 81

clearness. Disease usually begins in one eye, but the other often gets affected later.

Treatment: Foment frequently with hot poppy-head tea, made by boiling for a few minutes in a quart of water two crushed poppy-heads, and then strain through fine muslin. The tea should be applied as hot as the dog can comfortably bear it. Also apply the following drops:—

Recipe:

Dionin	2 grains.
Pilocarpine	1 grain.
Sulphate Eserine	$\frac{1}{2}$ grain.
Distilled Water to	4 drachms.

Two drops to be placed in the eye three or four times a day.

Glaucoma often requires surgical treatment, as puncturing the eye just where the sclerotic coat joins the cornea. This is done on upper part of eye to ensure slow, steady drainage. Sometimes it is necessary to remove the eyeball, and this often has the advantage of preventing the other eye becoming affected.

GLEET : See BALANITIS.

GOITRE :

Symptoms: A swelling, varying in size from a pigeon's to a goose's egg, situated low down in the neck, due to enlargement of the thyroid gland. Almost always both lobes of the gland are affected, and there is a swelling at both sides of the neck, though one may be slightly larger than the other. As a rule, the condition does not cause much inconvenience unless the glands are very big, or the patient very young—say six weeks of age—when the breathing is often difficult, and death takes place.

Treatment: When the patient is not very young, the hair over the swellings should be cut short, and tincture of iodine applied every day for three or four days; then, after waiting a week, the iodine may be repeated if the

swellings remain. When the patient is very young, say a few weeks old—and the disease is rather common amongst pointers at this age—the case is best treated with the homœopathic preparation of iodide of potassium 3 x; dose, five grains thrice daily, continued for a month if necessary. Afterwards, when the swellings are reduced, give cod-liver oil or malt. Under professional advice thyroid gland extract can be used in some cases.

GRIPING : *See COLIC.*

GUM, Growth on :

Symptoms: A hard, irregular-shaped growth of a red colour, which is somewhat constricted; occasionally grows on the gum, or rather from the periosteum of the jaw-bone. It is called an epulis. It is more common in old than young dogs, and it is difficult to cure. When the growth assumes large proportions, it pushes the teeth quite out of the regular line, and causes them to become loose.

Treatment: When possible, the application of a ligature of strong silk tied tightly round the neck of the growth, and as close as possible to the gum, is the best way of removing it. Sometimes this is not practical, as the base is large. In such cases, the growth should be cut off close to the gum, and the roots scraped down to the bone. Anæsthetic, of course, necessary (Waites' anæsthetic).

GUMBOIL :

Symptoms: A painful, swollen gum, generally the result of a bad tooth, or may arise from cold.

Treatment: Extract tooth; wash mouth out after with a drachm of chlorate of potash dissolved in a tumblerful of warm water. Give a dose of purgative medicine.

GUMS, Bleeding :

Symptoms: Occasionally the gums will bleed very freely, particularly in old dogs, and often apparently without any reason, and in some cases the bleeding is very difficult to stop.

Treatment: A simple and often an effectual remedy is placing a bandage rather tightly round the nose for an hour or more, so that the dog is unable to open his mouth. If this fails, the exact spot, or spots, as there are sometimes several, must be found, and a solution of adrenalin applied. Failing this, the tincture of perchloride of iron may be used.

HÆMATOMA: *See* EAR.

HÆMORRHOIDS (Piles):

Symptoms: Dogs do not suffer from real piles, particularly internal ones, but old dogs get a tumefied condition of the anus occasionally, and the parts become swollen, red, and tender.

Treatment: Relief may be given by bathing with a solution of carbolic acid, one in sixty of water, or a lotion made with a teaspoonful of powdered alum dissolved in half a pint of tepid water, but used cold. When the skin is broken apply the following ointment, and prevent licking for an hour or so (a bag is the best preventive):—

Recipe:

Hydrochlorate of Cocaine	.	4 grains.
Goulard's Extract of Lead	.	10 minims.
Lanoline		2 drachms.
Water		2 drachms.
Mix.		

Aperient medicine should be given. *See also* PILES.

HARE LIP: *See* DEFORMITIES (CONGENITAL).

HARVEST BUGS:

Symptoms: A collection of very small red insects looking almost like red sand on different parts of the body and limbs, causing irritation and scratching.

Treatment: Washing the parts daily for a few days with kerosene one part, and buttermilk six parts, mixed together; or Jeyes' disinfectant fluid diluted eighty times with water will destroy them.

HEART DISEASE :

Symptoms: Heart affections are not particularly common in the dog, except perhaps in Japanese and Pekinese (to a less extent); I should think at least a third of these dogs, by the time they are five years old, suffer from some form of heart trouble, principally valvular or dilated heart, which gives rise to difficulty in breathing, especially after exertion, a dry cough, occasionally fainting and loss of condition. Later, as the disease progresses, other complications arise, as enlargement of the liver and dropsy (ascites).

Treatment: Keep dog as quiet as possible; do not allow any hard exercise or running upstairs. Feed on a meat diet, and occasionally give a course of following mixture:—

Recipe:

Tincture Digitalis	.	.	2 drachms.
Tincture Nux Vomica	.	.	1 drachm.
Simple Syrup	.	.	1 ounce.
Water to	.	.	6 ounces.

Doses: From one teaspoonful to a tablespoonful ¹ three times a day, after food.

It is important to keep bowels open by occasionally giving aperient medicine. If cough very troublesome, give two or three times a day, made into a pill, from $\frac{1}{50}$ th ¹ to $\frac{1}{20}$ th of a grain of hydrate of heroin, with from half ¹ to two grains of hydrate of terpin (very useful).

HEAT, The : *See* ŒSTRUM.

HEMIPLEGIA :

Symptoms: Paralysis of one side of body, including limbs.

Treatment: Unless attack is due to a known cause, as an accident or the result of distemper, commence treatment with a dose of worm medicine, followed by a

¹ According to the size of the dog. See p. 81.

brisk purge. If no better in a few days, give a course of the following pills:—

Recipe:

Ergotine	6 to 24 grains. ¹
Powdered Nux Vomica	1 to 4 grains.
Excipient, <i>q.s.</i>	
Mix.	

Divide into 12 pills—one to be given three times a day after food.

When the paralysis is the result of distemper, the same pills may be given, with from one¹ to three grains of reduced iron each time.

When the patient is a *small* dog, the homœopathic preparation of nux vomica is the best medicine; of this, give five grains of the trituration 3 x three times a day.

Cases of hemiplegia are sometimes very slow in recovery, and it is a long time before the dog regains the proper use of his legs again; in such instances, electricity (continuous current) should be employed, and a blister to each side of the neck along the course of the spine applied if conditions call for it. They should run from just behind the back of the ears to just in front of the shoulder-joint, and be from one to two inches wide, according to the size of the dog. The blisters may be repeated in about a fortnight if necessary. Try ultra-violet ray before blistering.

HERNIA: Ruptures implicating the abdominal cavity are those referred to. Hernia or rupture is the protrusion of an organ from its natural position through a normal or abnormal opening in the surrounding tissues. The most common positions for rupture are the navel, where it is called umbilical hernia; the groin or inguinal hernia, and perineal hernia, which shows itself by the side, or sometimes both sides, of the anus.

Treatment: The only treatment to effect a radical cure

¹ According to the size of the dog. See p. 81.

is an operation, but in the case of umbilical hernia, so long as it remains soft and small, say not larger than a hazel nut or walnut, according to the size of the patient, it may be left alone, as it does not cause any inconvenience even to a bitch required for breeding purposes. Inguinal hernia, which is only seen in bitches, and nearly always on the left side, does not cause any inconvenience so long as it remains small; but this form of hernia has a tendency to increase in size, and when such is the case, more especially if it is intended to breed from the bitch, it is advisable to resort to an operation, which, provided it is performed under aseptic conditions, is unattended with danger.

In cases of old bitches suffering from this form of hernia, when from some reason an operation is objected to, care must be taken to avoid constipation. When this is done, any harm seldom occurs unless the hernia is very large, and becomes hard and painful, owing to some obstruction of the bowel in the hernical sac. If this happens, attention is required, and means taken to reduce the hardness and swelling. This is best done by placing the bitch, if a small one, upon one's knees. She should be put on her back, with the head downwards, and then the swelling should be carefully manipulated and massaged until it becomes soft and can be returned into the body. In obstinate cases laudanum, from three¹ to twenty drops in water, may be given every three or four hours; and after the hernia has been reduced, a dose of aperient medicine is to be given.

The treatment of perineal hernia is always unsatisfactory. An operation is not practical in the ordinary method of inguinal hernia. It may, however, be necessary to open the abdomen, draw forward the herniated parts, and ligature same to the entrance of the pelvic cavity; failing this, the only thing to do is to prevent constipation,

¹ According to the size of the dog. See p. 81.

and then the dog may live for years without much discomfort. Should the hernia become hard and distended, enemias of warm salad oil are to be administered, the swelling softened by careful kneading, and the contents of the rectum evacuated by means of a greased finger or handle of a small spoon. A course of the following pills is useful in these latter cases:—

Recipe:

Extract of Belladonna . . .	2 to 6 grains. ¹
Powdered Nux Vomica . . .	1 to 4 grains.
Powdered Rhubarb . . .	3 to 12 grains.
Reduced Iron . . .	12 to 30 grains.

Mix.

Divide into 12 pills—one twice a day after food.

HICCOUGH :

Symptoms: A spasm of the diaphragm causing a sudden, jerky expiration of breath. Most common in puppies. Result of indigestion caused by worms. It is not a serious complaint at any age.

Treatment: If a puppy, treat for worms. To relieve the spasmodic breathing, give from three¹ to twenty grains of bicarbonate of soda in milk; repeat in half an hour. If this fails, give from three to twenty drops of turpentine in a little milk.

HOARSENESS :

Symptoms: The bark is husky and hollow. May be the result of cold, or of persistent barking, as when a dog is shut up in a strange place.

Treatment: If from cold, give frequently one¹ or more teaspoonfuls of glycerine and water; if from over-barking, pacify the dog by removing the cause.

HYDROCELE : An accumulation of fluid in the tissues of the scrotum.

Symptoms: A swelling of the scrotum, which may be either hard or soft.

¹ According to the size of the dog. See p. 81.

Treatment: Apply following lotion often:—

Recipe:

Goulard's Extract of Lead	.	1 drachm.
Tincture of Opium	.	2 drachms.
Distilled Water to .	.	6 ounces.
Mix.		

In some cases the application of tincture of iodine is necessary, or even the tapping of the swelling. In extreme cases castration is resorted to and, if the patient is not too old, is successful.

HYDROCEPHALUS (Water in the Brain) :

Symptoms: May be seen in young unweaned puppies; in some cases it occurs later. The head, especially the top of the skull, is large and rounded, and the puppy shakes it from side to side as if it was too heavy to hold up. The gait is unsteady, and the puppy frequently walks in circles generally in one direction, is constantly whining and crying, does not thrive, and later generally has convulsions and dies.

Treatment: There is nothing to be done in these cases, and the kindest thing to do is to put the puppy out of its misery.

HYDROPHOBIA: *See* RABIES. Is a term popularly applied to the human disease consequent upon the bite of a rabid dog or other animal. Rabies is the term applied when animals are affected.

HYPODERMIC SYRINGE, Medicinal Use: First the syringe and needle should be sterilized by boiling for five or even more minutes before use, then the proper quantity of medicine or stimulant, or whatever is going to be given, having been drawn up into the syringe, and the needle adjusted, the part chosen for injection having been thoroughly dressed with pure tincture of iodine, a small fold of skin should be pinched up between the forefinger and thumb of the left hand, and the needle for about half an inch should be quickly

thrust into the skin at one end of the fold, and then by pressure on the piston the contents of the syringe should be evacuated. If the operation is done quickly, the dog knows nothing about it.

It does not in the least matter where the injection is made, so long as the place selected is where the skin is loose, as over the ribs.

It is most important that the syringe and needles be kept very clean; and each time after being used they should be washed out with a five per cent. solution of carbolic acid or spirit. A wire, dipped in white carbolated vaseline, should always be kept in the needle; these wires are supplied with syringe.

HYSTERIA: The name applied to a disease which apparently originated in the U.S.A.; it must not be confounded with the hysterical symptoms shown by puppies while teething or by puppies and young dogs owing to worms. It is due to *constitutional nervous trouble*, of the causation of which little appears to be known at present, and I have not heard of any laboratory work on the etiology (causation) being done.

The Symptoms are well known, and when correct treatment is given prompt and good results follow. In this country sporting dogs produce the largest number of cases; the majority of these arise suddenly and without any apparent cause; the dog without any previous symptoms may dash off from the owner or keeper, sometimes yelping and barking as if under the influence of terror or pain, sometimes going into convulsions. These attacks generally wear off, sometimes without treatment, but recur at irregular intervals; often they increase in violence and many deaths have occurred. Old dogs seem to be immune; the majority of cases are amongst youngish animals and a few among middle aged.

Treatment: The dog should at once be put in a dark, cool, quiet place and kept under as much control as will

prevent injury to itself. If able to swallow give, for Labrador size:—

Recipe:

Bromide Strontia	10 grains.
Chloral Hydrate	10 grains.

In two tablespoonfuls of water.

If unable to swallow give this same dose as an enema, but the water should be warm. Should this one dose quieten the patient the next dose should contain the bromide only, and should be given three times a day for two days, then only twice a day for two days. Light nourishing food—but no solids—bread and milk, bread and broth. For small breeds, Robinson's patent groats or Benger's food made with milk.

A very important part of the treatment is to *prevent recurrence*, therefore a course of small doses of belladonna homœopathic trituration, 3 x, grains 10. This should be given for at least a fortnight, three times a day. The dog meanwhile is gradually put back on to ordinary diet and gradual work. The bowels require attention, and fatigue should be avoided on commencing work again.

HYSTERIA IN YOUNG PUPPIES, especially at the time when they are changing their teeth, is a form of hysteria sometimes brought about by excitement, especially in hot weather.

Symptoms: The puppy rushes about here and there, not knowing where it is going or what it is doing, biting and snapping at everything within reach, and screaming and howling as if it was being unmercifully beaten. Saliva pours from the mouth, and many a one has been destroyed during such an attack, being supposed to have gone mad.

Treatment: Place the puppy in a basket, and put in a quiet, dark place. It cannot be made to swallow anything during the attack, but medicine in the form of an enema

may be given, as from ten¹ to thirty drops each of laudanum and sulphuric ether in from one¹ to four tablespoonfuls of tepid water.

A course of bromide must be given afterwards for some time to prevent a recurrence of the attack. Dose from three¹ to ten grains with milk, or in a little water, three times a day. Keep on a light diet and give no meat.

ICHTHYOSIS (Non-inflammatory) :

Symptoms: Hard, dry, thick skin which wrinkles, and the formation of large scales or scurf.

Treatment: Dress parts daily with following:—

Recipe:

Oil Cade	2 ounces.
Green Soft Soap	2 ounces.
Methylated Spirits	2 ounces.
Well mixed together.	

Or

Potassium Iodide	20 grains.
Petrolatum	20 grains.

Apply after bath every day. Give a course of arsenic, from one¹ to five drops of Fowler's solution, twice a day, in a little water after food. After a week, gradually increase the dose from two¹ to ten drops.

Once a week give a warm bath, adding one tablespoonful of bicarbonate of soda to every gallon of tepid water, and use three per cent. mercurial soap (Cook's) occasionally.

IMPETIGO: Mostly seen in young dogs and due to constitutional disturbance.

Symptoms: Skin is red, small pimples containing matter form, which break, discharging a sticky, creamy-coloured pus which dries and forms a thick crust.

Treatment: Wash dog with Cook's three per cent. mercurial soap; dress sores daily with compound naphthol

¹ According to the size of the dog. See p. 81.

beta ointment. Treat dog for worms, and give a course of arsenic as recommended for Ichthyosis.

IMPETIGO CONTAGIOSA : This is due to a specific organism such as the staphylococcus *Pyogenes aureus*, and occurs in puppies and young dogs, principally in large and unclean kennels where large numbers herd together and where epidemics are often met with. Washing with Cook's three per cent. mercurial soap and rinsing and applying sulphur ointment made with vaseline B.P. will quickly see an end of the trouble.

IMPOTENCE : Or the inability of an animal to propagate its species. In the dog it may be due to many causes. Of course castrated dogs are impotent, as they are when the testicles do not descend into the scrotum, though able to perform the act of coition satisfactorily. Deformities of the penis, fracture of the bone of the penis, stricture of the orifice of the prepuce, so that the penis cannot protrude; this can be remedied by the simple operation of dilating the orifice. In some cases the seminal fluid is at fault. These cases can seldom be remedied, though I have found a raw meat diet beneficial in some instances.

In cases of fracture of the penial bone, this, as a rule, in the course of a month mends satisfactorily without treatment, but the dog should not be used for stud purposes for a couple of months. Many dogs, especially young, and also those too much used at stud, suffer from temporary impotence due to lack of sexual desire. In the case of a young dog, a dose of cantharides, three to twenty minims¹ in water, two hours before trying to use him, often has the desired effect; if not, the medicine may be repeated in six hours. The same medicine may be given to shy bitches.

Sterility or impotence often occurs in bitches. Some cases are curable, but there are many which cannot be

¹ According to the size of the dog. See p. 81.

cured, for the simple reason that one cannot find out the cause, and all one can say is, the bitch is barren. The curable cases are those that are due to stricture of the mouth of womb (os uteri), a not uncommon occurrence, or to tumours, as polypi or other growths in the vagina; a description of the treatment of these diseases will be found in another part of the book. In some cases a bitch may miss breeding through the discharge in the vagina being of a too acid nature. Try with litmus paper, when it turns red if acidity is present. This can be remedied by syringing the passage well out with a warm solution of bicarbonate of soda, about one hour before service. The injection should be made by dissolving one teaspoonful of bicarbonate of soda in half a pint of water.

Then there are congenital deformities of the pelvis and vagina, occasionally met with in the bitch, which prevent successful coition, and the parts may become deformed as the result of accident, as being run over across the lower part of the back.

Again, an attack of metritis or inflammation of the womb, the result of a chill during the period of heat or from other causes, generally causes the bitch to be barren afterwards, and certain diseases of the ovaries also cause sterility.

A bitch who is very fat or in any way out of condition, the result of illness, or of insufficient and improper exercise, or too hard exercise, will seldom breed. The proper treatment of these cases is indicated by the cause.

For either dog or bitch, or both (Labrador size):—

Recipe:

Fluid Extract Damiana . . .	2 ounces.
Tincture Nux Vomica . . .	$\frac{1}{2}$ ounce.
Tincture Cinchona Co. . .	4 ounces.

Give a teaspoonful twice a day after food for a week before dog is required at stud.

A modern drug which has been strongly recommended for sterility and impotence is "didymin" (orchitic substance) (B. W. & Co.), in tabloids of five grains. Half to one tabloid twice a day after food; this dose may be gradually increased to double strength, and used for a week or more before mating.

INCONTINENCE OF URINE :

Symptoms: The involuntary passing of water. In puppies it is generally the result of nervousness, and passes off in time. The condition is generally present in most cases of paralysis; the bladder, after being over-distended, simply overflows, as it were. It is also a symptom of stone in the bladder, especially in the bitch.

Treatment: If in cases of general paralysis the bladder is kept empty either by pressure on both sides of the abdomen, just over the seat of the bladder, or by the passing of a catheter, the condition of incontinence is prevented. The former method is the best, as the frequent passing of the catheter sets up great irritation in the dog, and often does harm. The bladder should be relieved at least three times a day. When the result of general paralysis of the hind parts, improvement is not to be expected until strength returns to the legs; but when the incontinence is caused simply by over-distention, as, for instance, through keeping a dog which is very clean in its habits shut up a long time, then after emptying the bladder a course of nux vomica is often necessary to assist the bladder to regain tone. Give from one¹ to five drops of the tincture in water three times a day after food; also a free dose of purgative medicine, oil being the best, and keep on a light diet, avoiding meat and soups for a few days.

INDIGESTION : *See also* GASTRITIS: FLATULENCE.

Symptoms: In the acute form the dog vomits after everything eaten, also after drinking water, and there is

¹ According to the size of the dog. See p. 81.

always great thirst in these cases. The patient shows signs of discomfort after food, and occasionally suffers from diarrhœa. The tongue loses its natural pink colour, and becomes dry and of a rusty red. The breath is foul, and teeth become coated with fur. The dog quickly loses condition.

In chronic indigestion the symptoms are similar, but not so marked.

Treatment: Should commence with a dose of castor oil, even though the patient may be vomiting and suffering from diarrhœa. A few hours afterwards commence the following mixture:—

Recipe:

Acid Hydrocyanic Dil.	24 minims.
Liquor Bismuth	2 drachms.
Water to	3 ounces.

From half to two teaspoonfuls ¹ every four hours.

When the acute symptoms have passed, give the following powders:—

Recipe:

Ingluvin	$\frac{1}{2}$ to 2 scruples. ¹
Carbonate Bismuth	$\frac{1}{2}$ to 2 drachms.
Powdered Nux Vomica	1 to 3 grains.
Mix.	

Divide into 12 powders, and put in cachets—one to be given three times a day after food.

Diet: First simply give milk and Vichy water in equal parts to drink, a small quantity at a time; also occasionally a little Brand's beef essence. If sickness is very persistent, give stomach twelve hours' absolute rest, during which time give every four hours a peptonized beef suppository, then try the former diet again. When solid food is again given, it should at first consist of scraped lean raw meat,

¹ According to the size of the dog. See p. 81.

beef, mutton, or veal; for a change, boiled tripe. Thin barley water is better than plain water to drink.

INFLAMMATION : A condition of nutritive disturbance characterized by excess of blood (hyperæmia) and attended by one or more of the following symptoms: Redness, swelling, tenderness and pain of the part affected; rise of temperature; thirst; or abscess formation.

Treatment: External Inflammation: Apply following lotion with lint and bandage, or dabbed on part often:—

Recipe:

Goulard's Extract of Lead	.	.	1 drachm.
Laudanum	.	.	1 drachm.
Water to	.	.	6 ounces.

Mix.

If the temperature keeps up, say, to three or more degrees above normal, it is pretty certain an abscess is forming, in which case hot linseed-meal poultices should be applied. To keep the heat in the poultice, cover the outside of it with a layer of oil silk and bandage.

Internal Inflammation: Keep patient quiet; give aperient medicine, as from two to ten grains¹ of jalapin. If chest affected, put on flannel coat lined with thermogen wool. When inflammation situated in abdomen, apply heat to part, as hot flannels, hot-water bottles, or linseed-meal poultices. When temperature very high, give enemata, plain warm water. Doses of aspirin, from two to ten grains,¹ may be given three or four times a day; and if there is much pain, from two to fifteen¹ drops of laudanum may be given in water the same time.

Diet: Light, as milk, with Benger's food, stale bread or toast, and broth. Increase quantity if no solids given. Koumiss, sweetbreads, soft boiled eggs, and stimulants must not be forgotten.

INFLUENZA : True influenza is a specific, con-

¹ According to the size of the dog. See p. 81.

tagious, epidemic affection, showing catarrhal inflammation of the mucous membrane of the respiratory tract, and is of bacterial origin.

Symptoms: Dulness, loss of appetite, rise of temperature, pains in the loins, quick pulse. There is generally a cough, and bronchitis or pneumonia may develop. In some cases there is severe diarrhœa, and there may be some discharge from nose. Exhaustion, headache.

Treatment: Place patient in a dry and comfortable room or kennel with rest and quiet; the temperature should be kept from 55 to 65 degs. F., according to whether the dog has been accustomed to live in a house or kennel. If there is constipation, give a small dose of castor oil; and if the temperature is high, give from two¹ to ten grains of salicine three or four times a day. When fever has passed, give salicylate of quinine, from a quarter¹ to a grain, made into a pill, three times a day. Do not return the dog to ordinary exercise or work too soon for fear of relapse.

Diet: Light, whilst there is any fever; but when this has passed, strengthening food is required, as underdone or raw meat with rice or bread, also tripe and fish; and if appetite bad, offer some stewed rabbit with rice or bread.

INGUINAL HERNIA: *See* HERNIA.

INSECT BITES:

Symptoms: The parts may become much swollen and red, accompanied by a good deal of irritation.

Treatment: Dab parts with ammoniated quinine. failing this, eau de Cologne or methylated spirits. When place very tender, the lead and laudanum lotion as recommended for external inflammation may be used. Pond's extract. Paint with tincture of iodine.

INVALID FOODS: When nursing sick dogs the diet is important, as it is much better to get the dog

¹ According to the size of the dog. See p. 81.

to eat something for himself, than to be always pouring food down its throat. Taking food voluntarily not only does the dog more good, but it is less worrying to the patient, for when one has to feed with the spoon or bottle it is necessary to give nourishment very frequently, whereas when it is taken voluntarily, more, as a rule, is taken at a time, and therefore it is not necessary to offer food so often. A good meat tea is made with equal parts of veal, beef, and mutton—say half a pound of each cut up into cubes, then simmered, or slowly stewed in jar in saucepan for three hours in a pint of water. This should be strained and given either cold or warm, whichever the dog likes best.

A jelly made from rabbit is also very nourishing, and dogs, as a rule, are very fond of it, and will often take it when they refuse everything else. It should be made as follows:

The whole rabbit should be cut up in small pieces, including the liver; the leg bones should be cracked, the heads split open, and the whole stewed in a pint of water for some hours; then strained off, and if there is more than half a pint reduce it to that quantity, and set aside to cool. This may be given either cold or hot; a small quantity at a time, as it is, if made as directed, very strong.

Fish boiled in water, or boiled in milk; a capital fish soup is made by stewing white fish, such as plaice, in milk for some time, and then straining off and giving the soup to drink. Boiled fish stewed with rice also makes a good food, and the different kinds of fish alone boiled. A food of this kind may be given to a dog even when he has a fever, especially if he will take it himself.

Sheep's brains boiled in milk make an excellent and tempting food; they are rather relaxing.

Calves' sweetbreads also boiled, or even grilled, dogs are very fond of.

Chickens' livers grilled make an appetizing dish for a dog; and when a dog is convalescent, and the temperature is normal, he may be even tempted to eat by offering grilled meat.

Milk of course is one of the best and most nourishing diets, and when the dog is very weak the white of one egg beaten up and added to every cup of milk is very strengthening food. For a change, milk with Plasmon added should be given, but too much of this latter food must not be given to dogs with a high temperature.

Sanatogen is a most excellent, strengthening, and easily-digested food. Dogs will often retain this when they are unable to take any other food.

Benger's food with milk is also an easily-digested food, as it is partially predigested. Cases often arise when a dog cannot possibly retain anything in the stomach; then it is necessary to give nourishment by the rectum, and it is astonishing what a long while a dog can be kept alive and fairly strong in this way.

When no food can be retained and the dog otherwise fairly strong, give from two to five grains chlorotone in capsule; this takes some time to act (an hour or more) and makes some dogs drowsy and sleepy, but is not risky. When it has had time to act, the stomach will retain invalid's food quite well.

The best kinds of food for giving by rectum are peptonized milk, or peptonized beef tea, and peptonized beef suppositories. Burroughs Wellcome's are good nutritive suppositories (made in three sizes). The quantity of milk to be given per rectum is from one¹ to eight tablespoonfuls, warmed, and given every three or four hours alternatively with one of Burroughs Wellcome's meat suppositories.

In giving a nutritive enema, care must be taken to pass it very slowly into the bowel so as not to excite action,

¹ According to the size of the dog. See p. 81.

or the enema will be immediately ejected, and afterwards just raise the hind-quarters a little so that the fluid runs well into the body, and hold the tail down over the anus for a few minutes so that it cannot escape.

The milk can be peptonized with Fairchild's peptonized powders, which can be bought at any chemist's shop, with directions.

Brand's meat essences are excellent foods in cases of stomach disorders. Benger's peptonized beef jelly is a very easily digested preparation, and very useful in cases of severe vomiting.

Raw meat beef tea, made by soaking for a couple of hours half a pound of scraped lean raw beef in half a pint of cold water. It is then stood in front of a fire to get just warm, then strained and squeezed through a coarse tea-cloth or strong muslin. Or the juice may be pressed from raw meat with one of Dr. Klein's meat-squeezing machines. This is very nourishing and easily digested, and dogs are fond of it, and often will take it voluntarily when refusing other foods.

An excellent combined food for dogs very ill, especially with distemper, when the patient is very weak, or during convalescence, is made as follows:—

To a breakfast cup of milk, thickened with Benger's food, add the white of an egg, a full teaspoonful of invalid bovril, and a dessertspoonful of brandy; of this give from one ¹ to six tablespoonfuls every two or three hours alternately, with some beef tea or meat extract.

Messrs. Spratts' Patent have introduced a good food for invalids. It is a granulated meal, and is called Invalid Food. It is a most excellent preparation, and every dog I have offered it to has eaten it with avidity. I have found it a very useful diet mixed with milk for distemper patients; and I have given it to puppies just weaned, and they have thriven well on it. Though this

¹ According to the size of the dog. See p. 87

new food is called Invalid Food, it is an excellent preparation either mixed with milk or soup for small dogs; if meat is required, as it contains none, it can easily be added, but I am told that it contains a special meal, and that little or no meat is necessary.

The same preparation is put up in the form of biscuits which are crisp without being hard, and small dogs eat them with pleasure. Freeman's digestive rusks are excellent also, given dry. No doubt all dogs are better for having something hard to gnaw once a day. It cleans the teeth and mouth, hardens the gums, and assists digestion by increasing flow of saliva.

Animal Kreochyle is an excellent extract of meat for use in cases of great weakness, the result of distemper or from any other disease. It is also an excellent remedy in stomach disorders accompanied by sickness. Dogs, as a rule, take Kreochyle very readily, and it is easily digested and assimilated.

IRRITATION OF SKIN :

Symptoms: Constantly scratching, biting, and licking the skin, though when examined, there is often nothing to be seen. The condition occurs in hot weather, especially during the shedding of the old coat.

Treatment: After combing out all loose hair, give a sulphur bath made by dissolving one ounce sulphurated potash in a pail of tepid water; repeat every two or three days. If this does not give relief, bathe the dog in a warm solution of borax, one tablespoonful to a gallon of water. Give saline aperient medicine, as Dinneford's fluid magnesia, to small dogs, and Epsom salts to large ones. A meat diet is often beneficial in these cases, but sometimes it increases the irritation; then, of course, it must be avoided, and other food with green vegetables substituted. (Spinach in pulp added to meat food.)

ITCH : See MANGE (SARCOPTIC).

JAUNDICE : Deposition of bile pigment in the tissues of the body. *Obstructive* and *non-obstructive*.

Obstructive caused by gall-stones, parasites (worms by way of bile duct), catarrhal condition or stricture of duct, pressure on duct by growths on liver or pancreas.

Non-obstructive: Congestion of liver, destruction of liver-cells, toxic agents in blood, as in distemper, malaria, some form of poisoning.

Symptoms: The attack generally commences with sickness, dulness, loss of appetite; the membranes of the mouth and eyes turn yellow, as does the skin, the hairless part of abdomen and inside thighs. There is generally obstinate constipation, and what is passed from bowel is usually grey or slate colour. The urine is scanty and high-coloured.

Jaundice is also a symptom of organic disease of the liver.

Treatment: When the result of congestion caused by a chill, I have found, after many years' experience, that the homœopathic preparations of nux vomica 3 x and merc. sol. 3 x act well in these cases. Of the trituration give from two ¹ to ten grains of each every three or four hours. If the bowels do not operate on the second day, give an enema of from two tablespoonfuls to half a pint ¹ of warm soapy water; repeat daily if necessary. *High* enemas are sometimes necessary in chronic cases with long rectal tube and fountain syringe two or three times a week (when other enemas are discontinued); in each of these high enemas one grain of silver nitrate may be dissolved. Hot linseed-meal poultices may be applied to abdomen. Keep in temperature of 65 to 70 degs. F.; gently massage over seat of liver immediately behind ribs; rub in a little liquid mustard over that part once every other day and put on coat to prevent licking.

Diet: Mutton broth (in which some pulped spinach

¹ According to the size of the dog. See p. 81.

has been cooked), with toast or stale bread; milk and Vichy water in equal parts to drink; later boiled fish or tripe. When the condition is the result of obliteration of the duct, there is nothing to be done; relief may occur spontaneously, or an operation may be performed, but it is not recommended. When jaundice is due to organic disease of the liver, it cannot be cured, but the nux vomica and merc. sol. treatment will sometimes give temporary relief. The application of iodine vasogen over the enlarged liver in these latter cases is often useful in relieving tension of the organ. *

KENNEL CLUB REGULATIONS as to the preparation of dogs for Exhibition (1st December 1931):

A dog shall be disqualified from winning a prize or from receiving one if awarded at any show (except as hereinafter provided) if it be proved to the committee of the show or the committee of the Kennel Club, as the case may be:—

Treatments of Coats:

1. That any dye, colouring, darkening, bleaching, or other matter has been in any way used for the purpose of altering or improving the colour or marking of a dog.

2. That any preparation, chemical or otherwise, has been used for the purpose of altering or improving the texture of the coat.

3. That any powder, oil, greasy or sticky substance has been used and remains in the coat during time of exhibition.

Mechanical Interference with Coats:

4. That any part of a dog's coat or hair has been cut, clipped, singed or rasped down by any substance, or that the new or fast coat has been removed by any means except in the following breeds: retrievers (curly-coated), retrievers (golden), Bedlington terriers, bull-terriers, fox-terriers, Kerry blue terriers, Scottish terriers, Sealyham

terriers, collies, poodles, schnauzers, Pomeranians, and Yorkshire terriers. The old or shedding coat and loose hair may be removed in all breeds.

Mechanical Interference with Ears, Dew-claws, and Tails :

5. That if any cutting, piercing, breaking by force, or any kind of operation or act which destroys tissues of the ears, or alters their natural formation or carriage or shortens the tail, or alters the natural formation, or colour, of the dog, or any part thereof, has been practised, or any other thing has been done calculated in the opinion of the committee of the Kennel Club to deceive, except in cases of necessary operation certified to the satisfaction of the committee of the Kennel Club. Dew-claws may be removed in any breed, and shortening the tails of dogs of the following breeds will not render them liable to disqualification: spaniels (except Irish water), Airedale terriers, fox-terriers, Irish terriers, Kerry blue terriers, Sealyham terriers, Welsh terriers, Old English sheep-dogs, poodles, schipperkes, schnauzers, griffons bruxellois, toy spaniels, Yorkshire terriers, and such other breeds as the committee may from time to time determine.

Mechanical Interference with Mouth:

6. That the lining membranes of the mouth have been cut or mutilated in any way.

KENNELS, How to Disinfect: After dogs have been suffering from any contagious disease, like distemper or mange, in a kennel, it is necessary to disinfect it thoroughly, and it is best done in the following manner:

In a strong tin dish from half to a pound of sulphur, according to the size of the kennel, should be placed. A few drops of methylated spirits should be poured on top of the sulphur, and a light applied, the methylated spirits being added to make the sulphur ignite more easily. The kennel should then be made as air-tight as possible by having strips of paper pasted over all the crevices and around the window-frames, so that the

sulphur fumes cannot escape. The kennel should be kept sealed up for forty-eight hours, after which the windows and doors may be thrown open so as to ventilate the place thoroughly, and the following day the whole inside of the kennel should be thoroughly washed with a strong solution of Jeyes' fluid, 1 in 40. The walls and ceilings when dry should be afterwards well lime-washed or sulphur-washed—that is, with finely powdered sulphur mixed with water and size, the same way as whitewash is prepared. A day or two later, when everything is thoroughly dry, the kennel will be quite fit to receive dogs, or even puppies, without any fear of infection.

Formalin candles used as above are more penetrating even than sulphur to remove unpleasant smell. After the use of formalin or sulphur, evaporate some ammonia by sprinkling about room or kennel.

KIDNEYS (Inflammation of, Acute) :

Causes: The attack generally comes on suddenly; may arise from severe chill, irritant poisons, or eruptive fevers, but is generally the result of stone in the kidneys.

Symptoms: There is great pain over the loins; the dog walks with difficulty and arched back; the temperature rises 3 or 4 degs. above normal; the pulse is quick and full; the urine is high-coloured and scanty—sometimes it is the colour of blood, and mixed with mucus and pus; the limbs may swell from dropsy, and the dog is very thirsty and frequently sick.

Treatment: Give saline purgative medicine, as Epsom salts, from twenty grains to one ounce¹ in warm milk; repeat the next or following day. Also give every four hours from five to thirty grains¹ of hyposulphite of soda in water. As to food, it should consist principally of milk mixed with equal parts of Vichy water, and a little boiled fish. If sickness very severe, give from half to two drops¹ of *diluted* hydrocyanic acid in a teaspoonful

¹ According to the size of the dog. See p. 81.

of water every two, three, or four hours, and ice to lick. After the acute stages have passed, give tonics, as ammoniated citrate of iron, from one to five grains,¹ three times a day, in from one teaspoonful¹ to a table-spoonful of water.

For chill or fever, complete rest, liquid diet, and give:—

Recipe:

Sweet Spirits Nitre	.	.	6 drachms.
Solution Pot. Citrate	.	.	2½ ounces.
Simple Elixir	.	.	3 drachms.
Water to	.	.	8 ounces.

One teaspoonful to two every four hours. Or,

Recipe:

Caffein Citrate	.	.	½ drachm.
Water to	.	.	4 ounces.

One to two teaspoonfuls every four hours.

KIDNEYS (Inflammation of, Chronic): *See* NEPHRITIS.

Symptoms: May be the sequel of an acute attack or a less severe chill; stagnation of blood in veins as in diseases of heart, lungs, or liver; growth pressure on veins in region of kidneys; sometimes it is caused by gravel. There is tenderness and pain over the loins; the urine may be tinged with blood, scanty in quantity, high specific gravity, may be local or general dropsy; or after passing water, which may look quite clear and normal, the dog continues to strain, and a few drops of blood and some mucus escape.

Treatment: Much the same as in the acute form. A milk diet is important in these cases; it may be given with rice, tapioca, Force, or bread. Red meat must be avoided, but tripe (well boiled) and fish may be allowed. Vichy water should be given to drink; and a course of

¹ According to the size of the dog. See p. 81.

hyposulphite of soda, as recommended in acute inflammation, should be given, but only two or three times a day. If gravel or a stone is suspected, X-rays will decide; a course of borocitrate of magnesia with bicarbonate of potash is advised. The dose of the former is five¹ to thirty grains, and of the latter from two¹ to fifteen grains mixed with the food twice a day, and continued for some time.

KIDNEY (Inflammation from Injury): Such as street accident, heavy blow, or prolapse through a wound in loins. (I once had a case of this, and after removing the kidney by ligation (after opening the skin) the case made a good recovery.—F. W. C.)

Gunshot wounds in the kidney do not do well; usually they suppurate and sometimes slough. Check hæmorrhage as soon as possible; prognosis unfavourable. Professional advice should be sought, and X-ray used.

KIDNEY: Stone (Renal Calculus). *See* article CALCULI (STONES IN KIDNEY). A condition in which calculi form in the kidney structure, pelvis of kidney, or ureter leading from kidney to bladder.

Symptoms: Pain in region of kidney; renal colic may ensue; feeling of sickness and vomiting; feeble pulse and symptoms of collapse; blood may be detected in urine, and in some cases stone is passed by urethra; in the dog this is hindered by penial bone and in the bitch may not be observed. X-ray is useful for early diagnosis when suspected, and then an operation is called for if necessary. I always prefer the way of abdominal section.

LACTATION (Defective):

Symptoms: A small supply or total suppression of the secretion of milk.

Treatment: Give a raw meat diet, and stimulate the glands by gentle massage; also encourage the bitch to drink plenty of fine oatmeal gruel or Robinson's Groats.

¹ According to the size of the dog. *See* p. 81.

LACTATION (Excessive) :

Symptoms: Excessive secretion of milk. The glands are swollen, hard, and painful, and the milk often dribbles away. It may occur before the puppies are born, or just after; and it often happens to a maiden bitch to have a large secretion of milk, which shows itself about seven or eight weeks after heat, and lasts five or six weeks. A maiden bitch in this condition is very restless and wretched. She appears to be always looking for puppies. She will walk about with her tail down, crying, and occasionally scratches and rakes at her bed, and twists round and round as if making a nest.

Treatment: In the first instance, rub the glands with warm salad oil to soften them, and draw some milk off night and morning. In the second case, simply draw some of the milk off, and avoid if possible putting anything on the glands, in case you should injure the puppies or put them off their feed. In the case of bitches having milk who have *not been pregnant*, purgative medicine—castor oil is the best—should be given once or twice a week, and the glands rubbed with camphorated spirits, or dabbed with a lotion made with two tablespoonfuls of gin and half a pint of water. When the milk collects in large quantities so as to cause discomfort, it must be drawn off; but this should be avoided if possible, as it has a tendency to stimulate secretion. Give the food dry; biscuits are the best; no meat; plain water to drink.

It is most important to thoroughly attend to maiden bitches when in this condition, otherwise the milk curdles and becomes hard, and this is often the commencement of mammary tumours.

LARYNX (Inflammation of): Contagious Husk :

Symptoms: A dry, husky cough; the dog after coughing retches as if about to vomit. If neglected, may result in

bronchitic complications. It is very *contagious* and must be isolated.

Treatment: An emetic gives immediate relief; give from one quarter ¹ to a grain of tartar emetic shaken dry on the tongue, also give the following mixture:—

Recipe:

Liquor Hydrochlorate of Morphia .	2 drachms.
Syrup of Squills	$\frac{1}{2}$ ounce.
Syrup of Tolu	$\frac{1}{2}$ ounce.
Syrup of Lemons	$\frac{1}{2}$ ounce.
Water to	3 ounces.

Doses: From half a teaspoonful to a dessertspoonful ¹ two, three, or four times a day, according to the severity of the cough.

Also give purgative medicine. Holding the head over hot water, in which a little Friar's balsam has been mixed, gives relief, and so do the fumes of burning cresoline in special tins made for the purpose; this also is a good disinfectant which is called for in "Husk".

The dog should be kept dry and warm; in fact, in one temperature and isolated.

LEAD POISONING:

Symptoms: Blue line on gums, vomiting, loss of appetite, great thirst, generally constipation, but there may be diarrhœa. Colicky pains, and in some cases convulsions, followed by paralysis of the hind legs.

Treatment: Give an emetic if case at all recent, also washing out of stomach:—

Recipe:

Zinc Sulph. 5 to 10 grains in water.

Milk and white of raw eggs as diet; hot, dry compresses; bran bag for abdominal pains, and injections of morphine. For paralysis, use a course of massage with electric treatment, ten minutes twice a day, continuous current.

¹ According to the size of the dog. See p. 81.

Give Epsom salts, from ten grains¹ to one ounce, in some sweetened milk. Also a course of iodide of potassium, from half to four grains in from one teaspoonful¹ to a tablespoonful of water. For the treatment of the paralysis, *see* PARALYSIS. *See also* POISONS.

LEUCORRHŒA :

Symptoms: A pale, yellowish discharge from vulva. May occur before heat, but more often afterwards, and is frequently seen after pupping.

Treatment: Syringe with a weak tepid solution of Cond's fluid, about half a teaspoonful to half a pint of water. If the discharge is persistent, syringe with one drachm of powdered burnt alum in half a pint tepid water night and morning.

Give tonics, as from half¹ to three grains of sulphate of iron (made into a pill), two or three times a day.

LICE : *See* PEDICULI.

LINIMENT : The following is a soothing liniment for *recent* cases of sprains and injuries to joints, etc.:—

Recipe: The Liniment:

Tincture Hydrocynamus	.	.	4 drachms.
Methylated Chloroform	.	.	4 drachms.
Spirits of Camphor	.	.	1 ounce.
Soap Liniment	.	.	2 ounces.

Mix.

Apply with friction night and morning.

A stimulating liniment for bronchitis, sore throat, pneumonia, etc.:—

Recipe: The Liniment:

Strong Solution of Ammonia (Liq.			
Ammon. Fort.)	.	.	3 drachms.
Soap Liniment to	.	.	4 ounces.

Mix.

Apply with friction night and morning.

¹ According to the size of the dog. *See* p. 81.

A Liniment for "Chronic" Sprains, Enlarged Joints, and Glands:

Colourless Tincture Iodine	. . .	2 ounces.
Soap Liniment	. . .	2 ounces.
Mix.		

Apply with friction once a day.

LIPS (Cracked) :

Symptoms: The lips along the edges become dry, thick, and crack as the result of eczema.

Treatment: Paint once or twice a day with sulphurated calcium lotion; when cracks healed, anoint with boracic ointment. Give cooling medicine, as bicarbonate of potash and sulphate of magnesia, from two to ten grains of each,¹ twice a day with food.

LIPS (Sore) :

Symptoms: Unhealthy-looking ulcers assuming the form of cancer or lupus occasionally form on the lips.

Treatment: Clean frequently with a saturated solution of boracic acid, and paint the ulcer with a twenty-five per cent. solution of chromic acid twice a week.

LIVER (Sluggish) :

Symptoms: Indifferent appetite and loss of condition, the coat staring; bowels constipated, and the motions white or slate colour. Dog vomits in the morning. Tongue white and coated, and the breath foul. Eyes congested.

Treatment: Give from one to six grains¹ of grey powder, which repeat in a few days; also give a course of the following:—

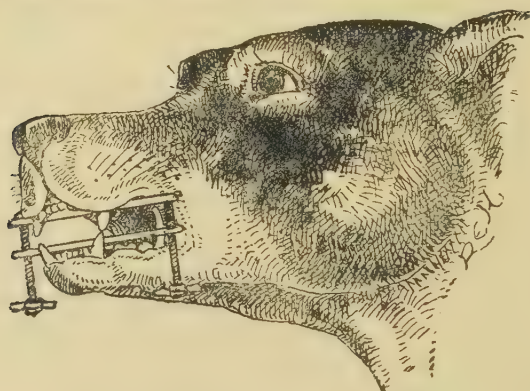
Recipe:

Bicarbonate of Soda	. . .	2 drachms.
Tincture Rhubarb	. . .	4 drachms.
Tincture Nux Vomica	. . .	1 drachm.
Water to		6 ounces.

From one teaspoonful to a tablespoonful¹ three times a day.

¹ According to the size of the dog. See p. 81.

Diet: Spratt's biscuits soaked in soup, with green vegetables added. Spinach if procurable.



A lever for forcibly opening the jaws in cases of "Lock-jaw".

LOCK-JAW: Other than "Tetanic" (Traumatic):

Symptoms: A rare disease, but occurs occasionally, as the result of injury to the head or severe hurt to the eye, and may result from sunstroke (?). It is seldom that the whole body as well as the jaw is affected in the dog as in other animals and men, and, as a rule, the disease assumes a chronic form. Though the dog is unable to open his mouth, he is generally able to suck in fluid food, as milk with eggs and strong beef tea. The muscles of the head become much wasted.

Treatment: At first give sedatives, as from two to ten grains ¹ each of hydrated chloral and bromide of potassium in water three or four times a day. After a time, means must be taken by aid of levers to force the jaws gently apart. It must be done very gradually by increasing the extent of the opening a little more each day. The treatment requires to be continued some time to obtain permanent beneficial results; but directly the dog is able

¹ According to the size of the dog. See p. 81.

to open his mouth a little, encourage the gnawing of bones. Massage, electrical treatment and violet-ray for affected parts.

LUMBAGO :

Symptoms: A form of rheumatism affecting the loins. The dog shows signs of much pain when walking or upon pressure to the parts. Dogs affected with lumbago often lose all power for a time in the hind legs; in fact, it is the cause of many cases of paraplegia.

Treatment: See RHEUMATISM.

LUNGS (Inflammation of) :

Symptoms: Not a common ailment of dogs, except in cases of distemper or influenza, but it may result from cold. The attack generally commences with rigors or shivering; the temperature rises to 103 or 104, in some cases even higher; pulse is increased in frequency, full and hard. The breathing is quick, and at each expiration the dog may give a suppressed grunt. The chest is tender on pressure. If the ear is put to the chest, crepitation will be detected; and as the disease advances, the parts of the lungs affected become quite dull, and there are no sounds to be heard except the air passing in and out of the large tubes. At the commencement of the attack, the dog may have a husky cough, but it generally stops after a day or so, to commence again later. The eyes are congested and the appetite poor.

Treatment: Place the dog in a jacket lined with thermogen wool, or apply hot linseed-meal poultices right round chest. If no better on second day, apply a blister to front of chest (see BLISTERS); the liquor epipasticus is as good as anything. For medicine give from one¹ to ten grains of phenacetin or aspirin (one grain caffenin to every five of aspirin) every six hours to reduce the temperature, but it must not be continued for long; brandy may also be given in small quantities often.

¹ According to the size of the dog. See p. 81.

If the dog becomes very weak and the pulse feeble, give every four or six hours from two¹ to ten drops of tincture digitalis, with from one¹ to five drops of tincture nux vomica, in water. In bad cases the inhalation of oxygen relieves the distressing breathing. Give this sufficiently early; do not wait until too late, as is so usual. Oxygen is always best given when chilled by passing over hot water; special bulbs are attached to tubing if requested. It is important to keep the bowels open; in fact, it is generally a good plan to give a purge at first. The diet must be light, and consist of milk, beef tea, meat extracts, and such like food. Robinson's patent groats made with milk.

LUPUS : See LIPS (SORE).

MAGGOTS : Dogs with a long coat kept in a dirty state sometimes become infested with maggots, especially in those parts near the tail.

Treatment: Wash daily for a week with Jeyes' fluid diluted eighty times with warm water. Afterwards dry and comb out all mats. In all these cases it is best to cut the hair off short before treatment is commenced.

MANGE (Sarcoptic) : This contagious, parasitic skin disease is caused by the *Sarcoptes canis*, a microscopic parasite, the finding of which (under the microscope) makes certain the diagnosis. Not only is this disease contagious from one dog to another, but is readily communicated by means of brushes, blankets, coats, baskets, kennels. It is extremely contagious for human beings, being then called "Scabies". Isolation is the first consideration, burning of all bedding after use, and disinfection of utensils and kennels as described hereafter.

Both rats and cats and mice are subject to this disease, and are very frequently the cause of infection as they are in the case of ringworm.

Symptoms: The complaint once contracted soon (a few

¹ According to the size of the dog. See p. 81.

weeks) spreads more or less all over the body, but the most favourite spots for it to attack are the skin around the eyes, the outside of the ears, the elbows, and the outside of the hind legs, as well as the skin covering the abdomen, and underneath parts of the chest. Small red spots like flea-bites appear where the insect burrows into the epidermis, and the acrid matter which they excrete sets up intolerant irritation, causing the dog to constantly scratch, breaking the coat, which is now very brittle, and leaving bare patches, besides injuring the skin and creating sores which dry and scab. If there is any doubt about the case, the skin should be scraped, where bad, with a knife, and the scrapings examined under a microscope, when if the disease is mange the parasite will be found.

Treatment: The disease is easily cured, and the specific remedy is powdered sulphur, one part mixed with eight parts of vegetable oil, or vaseline, which should be thoroughly well rubbed all over the dog every four days for three times; three or four days after the last dressing, the dog may be washed, using Cook's three per cent. mercurial soap. When once the dog has been thoroughly dressed all over, the risk of infection is virtually nil.

It is important to thoroughly disinfect the kennels by fumigation (formalin candles), and well wash the walls and floors with a strong solution of Jeyes' fluid or lime and sulphur wash (equal parts) with "size". Also all the collars, leads, combs, and brushes used for the dog should be disinfected by baking or soaking in a solution of Jeyes' fluid, or left in kennels for fumigation.

MANGE (Follicular): A skin disease confined principally to puppies and young dogs, though adult dogs do contract it and may carry it all their lives and, if bitches, hand the trouble on to their puppies. It is not nearly so contagious among dogs who may casually meet, but when lying together in kennels it is much more easily contracted. It is not contagious to mankind.

Symptoms: It is a slowly progressive disease, and may commence with a single circular bare patch, about the size of a shilling, on the face or side of nose. The disease is, of course, not confined to the head, as the first sign may appear on some part of the body or one of the legs. The patch is generally of a dirty grey colour, and upon it will be found a number of reddish pimples or elevations of the skin, somewhat larger than those seen in ordinary mange; some contain a blood-coloured fluid, others ordinary pus, or matter tinged with blood, which is easily evacuated by squeezing. This fluid contains the parasite, which looks, when examined under the microscope, like a small maggot.

As time goes on, the original patch increases in size and others form, the pustules break, one running into another, and unhealthy-looking sores result. When these wounds heal, the skin has a dry, corrugated appearance, little excrescences of skin are formed, and the hair does not always grow again, or is broken off short.

The skin in follicular mange generally turns a dark greyish-blue or black colour, and the disease is called by some people "black mange". There is a strong "mousey" smell.

Treatment: It is a most unsatisfactory disease to treat, for often after months of hard work the dog is no better, but on the contrary much worse, the disease having progressed in spite of everything. If the patient is not a valuable dog, and the attack a bad one, it is much better to destroy him at once; however, when it is decided to try and save the dog, treatment should commence by having the dog, if a long-coated one, clipped all over, so that the affected parts may be more easily reached, then commence the Bayer treatment by M.R.C.V.S. It is the only method I have used with real success, and if the dog is either a great favourite or of great value from the monetary or breeding point of view, it is worth

the trouble and expense; both these latter are inevitable as is the time involved—sometimes a year or more. (I have often used a polyvalent serum in conjunction with the Bayer treatment.) When washing, use Cook's three per cent. mercurial soap.

MARASMUS (Simple Wasting in the Young) : When this occurs in very young puppies, the outlook is very unfavourable; when older and stronger, much more favourable. Good hygienic treatment is of more importance than medicine; warmth, cleanliness, pure air. Above all, proper feeding—with what is best digested.

Symptoms: Loss of condition, colour, flesh, and strength.

Treatment: A raw meat diet with tonics, or the following pills:—

Recipe:

Reduced Iron	.	.	.	12 to 48 grains. ¹
Arsenic	.	.	.	$\frac{1}{12}$ th to $\frac{1}{4}$ th grain.
Extract Gentian	.	.	.	6 to 20 grains.

Mix.

Divide into 12 pills. Once or twice a day after food.

For cases of very poor digestion the following is valuable:—

Recipe:

Cream	.	.	.	.	1 ounce.
Whey	.	.	.	.	1 ounce.
Water	.	.	.	.	1 ounce.
Sodium Bicarb.	.	.	.	.	10 grains.
Milk-sugar	.	.	.	.	1 teaspoonful.

Can be given every two hours, increased in quantity as digestion improves, and later milk can be substituted for whey. Allenbury's food is excellent.

Cod-liver oil emulsion is also advised after food, from half a teaspoonful¹ to a tablespoonful twice a day.

MASTITIS (Inflammation of Breast) : Usually

¹ According to the size of the dog. See p. 81.

septic in origin, infection taking place through a crack or fissure in the nipple; sometimes it occurs in overactivity of the gland with retained secretion; very occasionally through imperforate (blind) teat.

Symptoms: This complaint is not uncommon in bitches when nursing puppies. One or more of the milk-glands may be affected. The breast is swollen, red, and very tender. The bitch is off her feed, and there is often a good deal of pain and fever.

Treatment: This is directed to prevent abscess formation. First give a brisk saline purge; the breasts should be emptied at regular intervals by puppies, massage, or breast pump. Applications of hot lard are soothing, or leadwater and laudanum. Wash afterwards.

Hot water fomentations are the best, as it is difficult to apply poultices when a bitch is nursing puppies. If the temperature is very high, from two ¹ to ten grains of salicylate of soda may be given three or four times a day.

Puppies must be moved to another bitch or be bottle-fed if abscess formation takes place or interferes with their food supply. When the abscess is opened it must be done sufficiently to evacuate the pus most thoroughly and to allow for irrigation and drainage. Subsequently the wound should be irrigated several times a day. If only one of the glands is affected, and that can be effectively bagged or bandaged, the puppies may use the other glands. If they are removed, then all the nipples must be "stripped" two or three times a day and saline purges given; meat supply stopped; fish is allowable.

After the abscess has been opened, or has broken, tonics as from a quarter of a grain ¹ to one grain of sulphate of quinine should be given three times a day.

MENINGITIS (Inflammation of the Membranes of the Brain):

¹ According to the size of the dog. See p. 81.

Causes: Occasionally occurs in young puppies, particularly when suffering from worms, but is more often the result of a protracted attack of distemper, or fractures of skull or injuries, or internal otitis.

Symptoms: In young puppies, the patient rolls its head from side to side, is constantly whining and crying, has convulsions, and the head is burning hot. When the result of distemper, convulsions are always present, the dog champs the jaws, emitting a quantity of frothy saliva. These are what are called distemper fits. The eyes are congested, and there are generally two, three, or more degrees of fever. The patient is frequently crying or whining, denoting evident signs of pain. As a rule, in these cases the patient becomes greatly emaciated and very weak—in fact, paralysed; and often, as the inflammation extends to the spinal cord, which it frequently does, chorea or St. Vitus's dance sets in, which is often incurable.

Treatment: When occurring in young puppies, worm medicine should always be given; and to allay the pain and stop the convulsions, small doses of bromide of strontia be used—from two¹ to five grains in a little milk three or four times a day. Ice may also be applied to the head in an ice-bag. When the convulsions have quite stopped, small doses of cod-liver oil do good. When meningitis follows distemper, if the attack is a bad one, there is little hope of recovery, and therefore the proper course to pursue is to have the dog mercifully put out of his misery. However, people seldom will agree to this without, as they say, giving the dog a chance, and when the case is not a bad one recovery is not impossible, though the chances are greatly against it, for the disease is usually progressive. If the bowels are not operating give a dose of castor oil, and commence a course of bromide of strontia at once. Give from two¹

¹ According to the size of the dog. See p. 81.

to ten grains, or even fifteen grains, if the dog is a very big one, every three, four, or six hours, according to the severity of the case. Apply an ice-bag to the head for a quarter of an hour or longer at a time, and put a seton in the back of the neck, just behind the ears, which dress with turpentine ointment. Keep the dog absolutely quiet in a dark room, and feed entirely on a liquid diet—as milk, with white of egg; Benger's food or toast; and some beef tea. Brand's essence or rabbit soup may be given occasionally, but those latter foods are more stimulating than nourishing. The milk foods mentioned are perfect food, and will support the dog an indefinite time. For the treatment of chorea and paralysis, see the articles on those subjects.

The bromide must be continued for some time, even though the convulsions stop, but given in less quantities.

The treatment for worms and the use of a seton must not be carried out if such treatment is calculated to increase the nervous symptoms. (*See SETON.*)

All treatments for worms should be systematically carried out when puppies are in good health; this would obviate oceans of trouble when illness appears.—F.W.C.

MILK (Natural and Artificial) : It is not generally known how much stronger or more nourishing a bitch's milk is than cows' milk, and I was surprised myself when I had some samples analysed. Below I give the analysis of a fair sample of each kind:—

	<i>Cows'</i>	<i>Bitches'</i>
Water	87.4	66.3
Fats	4.0	14.8
Sugar and Soluble Salts	5.0	2.9
Casein and Insoluble Salts	3.6	16.0

Practically a bitch's milk is nearly three times as strong as a cow's in fats and casein, and yet people, when giving the latter to puppies, often dilute it with

one-third of water, and thus add to its weakness. Consequently a much larger quantity has necessarily to be given to a puppy for it to derive sufficient nourishment to sustain it, and as a result the stomach is over-distended. Indigestion follows, and the puppies do not thrive. All breeders must have noticed how often puppies go back directly artificial food is given them, even before being entirely weaned, and this, no doubt, is in a great measure due to improper food in overloading the stomach with a quantity of waste and superfluous fluid. Even when cows' milk is given pure, nearly three times as much in bulk ought to be given as of bitches' milk, and it is thus seen at a glance how a puppy's stomach, which is naturally small, will be over-distended. A dog's digestive organs are arranged to receive food in a concentrated form—for instance, dogs in nature eat only meat, and until they get this food they have nothing else but the dam's milk, which is also a concentrated food. When about five or six weeks old the mother goes out in search of food, and comes back with her stomach loaded. After a time she ejects the contents by vomiting, when partially digested, and this the puppies eat, and thus they get naturally partially-digested food suitable for a puppy's delicate stomach.

To make cows' milk into the equivalent in food value of bitches' milk, mix three small tablespoonfuls Plasmon in five ounces cold water, then add three-quarters of a pint cold fresh milk. Boil slowly for about two minutes, *let stand*, and *when cold* add three dessertspoonfuls fresh cream and well mix.

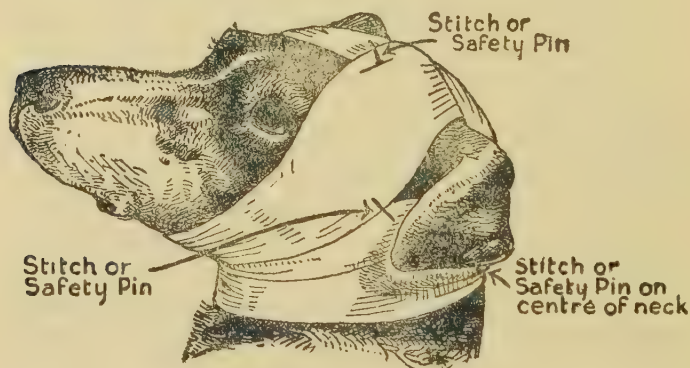
When feeding puppies with artificial bitches' milk, it must be remembered that only a small quantity is necessary—for instance, about the third part one would give of cows' milk.

MILK (Defective Secretion): See LACTATION (DEFECTIVE).

MILK (Excessive Secretion) : See LACTATION (EXCESSIVE).

MISCARRIAGE : Premature labour is much rarer in dogs than in cats, or indeed than in the human subject. It more often results from some accident than from constitutional causes, when one or more of the puppies are killed and a miscarriage results.

There may be difficulty in getting rid of the dead or even living puppies, and professional aid should be obtained promptly.



How to bandage a dog's head.

MOUTH : See GUMBOIL, LIPS, TEETH, TOOTHACHE.

MUMPS (Inflammation of the Parotid Gland) (Parotitis) : The condition called "mumps" is a contagious disease caused by a specific organism, but swollen conditions of the part may arise from injuries, occlusion of the duct, or the occurrence of pus in the gland (abscess formation).

Symptoms: Swelling of side of face, and just below the ear, which is very tender. Dogs suffering from this complaint are generally rather feverish. There is a loss of appetite and an excessive flow of saliva; sometimes difficulty in swallowing.

Treatment: Give a dose of purgative medicine and cover swelling over with a piece of spongiopiline, or a pad of cotton wool covered over with oil-silk, and apply a bandage or put on a cap. Give:—

Recipe:

Potassium Tartrate	.	.	1 grain.
Magnesium Sulphate	.	.	4 drachms.
Spirits Ether Nitre	.	.	3 drachms.
Syrup	.	.	1 ounce.
Water to	.	.	6 ounces.

A teaspoonful every three or four hours.

Later, when the swelling has commenced to go down, give the following tonic pills:—

Recipe:

Reduced Iron	.	.	6 to 30 grains. ¹
Sulphate of Quinine	.	.	4 to 12 grains.

Divide into 12 pills. One to be given twice a day one hour after food. Keep warm, and give light food; if much temperature or difficulty in swallowing, give liquid food.

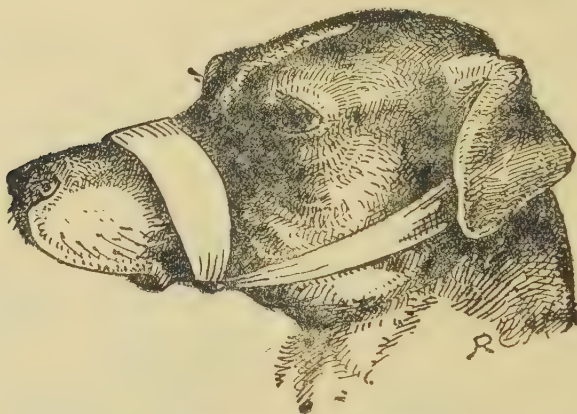
MUSCLES (Wasting) :

Symptoms: There may be general wasting of all the muscles of the body, the result of some long illness, as distemper; or there may be wasting of the muscles of one or more limbs, the result of want of use, as in cases of injury; or some disease of the spinal cord, causing paralysis, and occasionally wasting of the muscles of one or both sides of the head and face, the result of some injury to the head. It may arise from continued pressure, interference of blood or nerve supply, or chronic lead poisoning.

Treatment: When the result of illness, no special treatment is required beyond giving tonics, as cod-liver oil, for when the patient gets about again the muscles

¹ According to the size of the dog. See p. 81.

will fill up as before. When one or more limbs are affected as the result of disuse from lameness or paralysis, the



A dog muzzled with tape.



How to muzzle a bulldog with tape.

The piece over the forehead is necessary in a bulldog to draw the tape off the short nose to permit easy breathing.

limbs should be massaged and galvanized, friction, passive motion, and ultra-violet rays. When the head is affected, the case is often very obstinate (nearly always owing to injury of nerves), and sometimes the muscles never regain their normal size, but the best treatment is massage, galvanism, and encourage the dog to gnaw big bones.

MUZZLING A DOG : The best way to muzzle a dog effectually, so that he cannot bite, when it is necessary to handle a nervous dog for any specific purpose, is with a piece of strong and broad tape which should be passed over the top of the nose, tied twice under the chin, and then the ends should be carried behind the ears, and again tied tightly.

Care must be taken in muzzling a bulldog, or any short-faced dog (griffon, toy spaniel, pug), not to interfere with his breathing. Therefore, after tying behind the head, one end of the tape should be passed under the tape which crosses the top of the nose, and this part pulled well up and tied with the other end of the tape over the forehead, so as to remove any pressure from the top of the nose. (*See ILLUSTRATION.*)

NAILS (Cutting) : This cannot be safely done with scissors, but proper nail-clippers should be used. When the nails are white, it is an easy matter, as the quick can be seen, and the nail may be cut off within the sixteenth of an inch of the quick; but when the nail is black, the quick cannot be seen, and the first one must be cautiously cut a little at a time. The dog will soon wince when the nippers are getting near the sensitive part. When one is done, it is an easy matter to do the rest, as they may be cut off in the same proportion as the first. Small *bone forceps* are best for large breeds.

NAILS (Dew-Claws) : The dew-claws or side-nails should always be removed from the back legs a few days after birth, by being cut off close to the limb with a pair

of sharp scissors. I always consider it would be a good plan if it were the custom to remove the dew-claws from the fore legs of all dogs also; of course, in some cases, as in fox-terriers and others, it is done.

NAILS (Injuries, etc.) :

Symptoms: Dogs with defective action wear their nails away (more particularly those on the fore legs) to the quick, which causes lameness. Some dogs' nails are very brittle, and they crack and split to the quick, causing lameness. Toe-nails of dogs who do not have sufficient exercise turn over as they grow, and the point becomes embedded into the pad, causing swelling, suppuration, and great pain. The dew-claws of dogs who do not get the chance of digging often grow to a considerable extent, which weakens them and makes them liable to break, as often happens, and the quick becomes exposed and bleeds, causing the dog to go lame as if he had a broken leg. If they do not break, they grow, entering the pad as previously described. The nails of the dew-claws are particularly liable to grow into the flesh.

Treatment: In cases of a dog wearing the claws away through defective action, as a rule, treatment is of little use; but if the dog is made to exercise on grass land, the nails will grow to an ordinary extent, and the dog walk much better, but the relief is only maintained whilst he is not allowed to run on hard roads. When the defective action of the limbs causing undue wearing of the nails is due to partial general paralysis—as the sequel of distemper, for instance—then it is only temporary, and will pass off as the patient improves in health and strength. To remedy the cracking and splitting of the nails is often a difficult matter, but leather boots can be made which lace up and fasten round the wrist; if properly fitted they protect the injured nails and allow them to grow. Then exercise on grass or soft ground is safe, but stone pavement will cause a return of the trouble. Take boots

off when resting and at night. In some cases benefit is derived by the application of tar ointment, which should be well rubbed into the nails twice a day. The frequent application of glycerine is also a good remedy. In very bad cases, especially when only one nail is affected, it may be extracted, or the last joint entirely removed.

When a nail has grown too long and injured the pad, the nail should be cut close to the quick without making it bleed; and when there is any festering, hot bread or linseed-meal poultices should be applied for a day or so. Afterwards the wound should be dressed with boracic ointment, and the foot kept in a padded canvas bag for a few days.

When a dew-claw becomes broken, it is nearly always through the quick. In such cases it is necessary to remove the claw by extraction with a pair of tooth forceps, and not by cutting, or the quick will be injured, and the nail will grow deformed. Afterwards anoint the raw surface with boracic ointment, cover over with a pad of boracic wool, and bandage.

NASAL CATARRH : The most frequent cause is cold or wet, or dust and chemicals, sometimes foreign bodies, grass seeds or stalks, or as in next article. (*See NASAL PARASITES.*)

Symptoms: Sneezing; a watery discharge from nose, followed by a semi-purulent discharge and coughing; but unlike distemper, the attack is seldom accompanied by fever or with much loss of condition, and as a rule, the dog is better in a few days.

Treatment: Put in a dry, warm room of a temperature about 60 degs. F.; give a dose of aperient medicine as from two ¹ to ten grains of jalapin. Syringe for dust and foreign bodies; cover dog's eyes before doing this. The next day, when this has worked off, commence the following pills:—

¹ According to the size of the dog. See p. 81.

Recipe:

Salicylate of Quinine . . .	2 to 12 grains. ¹
Solution Arsenic . . .	3 to 12 minims.
Solution Sulphate Atropine . .	$\frac{1}{2}$ to 2 drops.
Extract Gentian . . .	5 to 20 grains.

Mix.

Divide into 12 pills—one to be taken every four hours.

When the discharge has ceased, and the appetite has become normal, if the cough continues troublesome, give from half ¹ a teaspoonful to a tablespoonful of cod-liver oil two or three times a day.

NASAL PARASITES :

Symptoms: Very occasionally dogs suffer from a worm in one of the nostrils called *Pentastoma Tænoïdes*. It is a worm varying in size from one and a half to two inches long, and about half an inch wide in the centre, tapering slightly at each end. It develops at the back of the nose, and whilst growing appears to cause no discomfort to its host; but when it commences to move, it induces a good deal of sneezing and a discharge of mucus from the nasal passage from the side where it is lodged. The dog may eventually dislodge it during a violent attack of sneezing.

I have never seen more than one in a case, and the dog seems comfortable directly it has got rid of its guest. Syringing may be necessary and it encourages sneezing. Use warm boracic lotion and cover dog's eyes. Smelling salts also encourage sneezing.

NASAL POLYPUS :

Symptoms: A growth with a narrow neck which forms in the nasal passage causing irritation, sneezing and snorting, a purulent discharge which may sometimes be tinged with blood.

Treatment: Consists in removing the growth by ligature if it can be got at, or by an ecraseur or a snare; but it

¹ According to the size of the dog. See p. 81.

is a surgical case, and a veterinary surgeon should be consulted.

NECROSIS (Diseased Bone) :

Symptoms: Generally the result of some injury. The parts are swollen, inflamed, and very painful, and generally an abscess forms, which, if not lanced, bursts, discharging a thick, creamy and often offensive-smelling pus. The bone, which is generally dead, lies exposed at the bottom of the wound, which does not heal permanently until the dead bone comes away.

Treatment: At first, hot linseed-meal poultices dusted over with powdered charcoal are to be applied, and continued for some days after the abscess is open. Then lint saturated with carbolic oil, 1 in 40, is to be placed over the wound, and kept in place with a bandage. As a rule, after some time the dead bone exfoliates and comes away of itself, and the wound then soon heals, but in many cases an operation is necessary to remove the dead bone.

NEPHRITIS (Inflammation of the Kidneys) :

See KIDNEYS (CHRONIC INFLAMMATION).

Symptoms: Generally commences suddenly with an attack of shivering and a rise of temperature, there being often three or four degrees of fever accompanied by a rapid pulse. There is pain in the back, vomiting, scanty and high-coloured urine, or blood may be mixed with the water. In some acute cases it is quite suppressed, and the dog then suffers from uræmic poisoning. It may arise from a severe chill, but oftener from a stone in the kidneys. X-rays for diagnosis.

Treatment : Give milk and Vichy water in equal parts to drink, also water, to which has been added a teaspoonful of cream of tartar to every pint. Administer a dose of Epsom salts, from one scruple ¹ to one ounce, dissolved in warm water, but given cold. If vomiting per-

¹ According to the size of the dog. See p. 81.

sistent, give from half¹ to two drops of diluted hydrocyanic acid in a teaspoonful of water, and ice to lick. After the acute stage has passed, give from one¹ to five grains of ammoniated citrate of iron, three times a day in water.

NETTLE-RASH: Elevations of the cuticle or weals resembling the sting of the nettle (*Urticaria*); they are generally attended by much itching.

Causes: Arises suddenly, and often the result of a chill, as, for instance, from a dog plunging into cold water when hot after exercise. When once a dog has had an attack, he is liable to a recurrence, and then indigestion will often induce it. Eating of fish, or local irritation such as sting of jelly-fish while swimming in sea, sting of wasp or bee. Some drugs will cause it.

Symptoms: The skin becomes suddenly nodulated or swollen in patches, the hair standing on end. The ears may be affected and become half an inch thick; the head is often attacked, and the dog is temporarily blind because the eyelids are swollen. Sometimes one or more legs are the seat of the trouble, and become three or four times their normal size; in other cases, large patches appear about the body. As a rule, it passes away almost as quickly as it comes.

Treatment: For irritation and swollen eyelids, sponging with Pond's extract; for the body, ordinary washing soda can be used, small piece in pint of water for swabs on skin.

Keep dog quiet and warm whilst the attack is on, and give from half to two drops¹ of liquor arsenicalis (B. P.) in a little water every two or three hours. Also give a good dose of aperient medicine. For a few days after a dog has had nettle-rash, he should be kept on a light milk diet, and given a course of arsenic, as from one to eight drops¹ of liquor arsenicalis in water, three times a day after food.

In chronic cases, which are rare, considerable attention

¹ According to the size of the dog. See p. 81.

must be given to the gastro-intestinal tract, and milk diet is called for.

NEURALGIA :

Symptoms: Dogs are affected with a form of neuralgia that attacks the muscles and nerves of the neck and shoulders. The pain, which is very acute, comes on quite suddenly, and the dog cries with it. The head is drawn into the body, as it were. The muscles are swollen, and very tense. There is a difficulty in walking; and when it is attempted, it is done very slowly and stiffly. The attack may last a couple of hours, sometimes longer, and then slowly passes off, and the patient may appear quite well; when all at once it may come on again as badly as before, and so keeps on for days, and sometimes weeks, unless some suitable treatment is adopted.

Treatment: The dog must be kept very quiet in these cases, as very often any sudden movement induces an attack. Give from two to ten grains¹ of salicylate of soda three times a day, or aspirin and caffein (aspirin five grains, caffein one grain), made into a pill; and if the attacks of pain are very acute, also give two or three times a day, injected under the skin, from one-twentieth to one-eighth of a grain¹ of hydrochlorate of morphia, with from $\frac{1}{300}$ th to $\frac{1}{100}$ th of a grain¹ of atropine, in from five¹ to ten minims of distilled water. At first these injections induce vomiting, but it soon ceases, and the treatment is a specific for the disease.

NIPPLES (Sore) :

Symptoms: The nipples become swollen, inflamed, and cracked very often after a bitch has been nursing puppies some weeks, so much so that at last she will not allow the puppies to suckle, especially when their milk teeth begin to come through.

Treatment: Wash the parts two or three times a day

¹ According to the size of the dog. See p. 81.

with boracic lotion, and anoint with boracic ointment after drying, and keep puppies away from bitch.

NOSE (Bleeding) :

Symptoms: May be due to injury of the head or face. It often occurs in cases of pneumonia, and it is also a symptom of a polypus or parasite in the nose or ulceration of the membrane lining the nasal passages.

Treatment: When slight, no particular treatment is required; but if persistent, the cause should be ascertained, and if possible removed. When severe, as the result of some injury, ice may be held to the bridge of the nose intermittently; and if this does not stop it, then pour or inject about fifteen drops of the solution of adrenalin diluted four times with water into one or both nostrils. It is not advisable to plug the nostrils, as it distresses a dog to breathe through his mouth, and the *continuous* application of adrenalin to the mucous lining of nasal cavity has deleterious effect.

NURSING: "*Not only read this but learn it.*" The first thing to be considered in nursing a sick dog is proper quarters for the patient to live in, for in all cases of serious illness he should not be allowed to run loose about a house and out of doors when he likes. If a house dog, he should be put in a good, well-ventilated room; the carpet can be removed and newspaper put down; it is easy to change frequently; with the temperature kept at as near 60 degs. F. as possible. Of course, in very hot weather this cannot be done, but as much air as possible must be given by keeping the windows wide open during the summer months. In winter or cold weather, the temperature of the room should be kept up to 60 degs. F. by means of artificial heat—*an ordinary fire is best*; failing this, a paraffin stove—avoid a gas stove if possible. Of course, with dogs who are in the habit of living out of doors it is different; but even with them, dry, large, well-lighted and ventilated, com-

fortable quarters, free from draughts, are absolutely necessary if the patient is to have a fair chance, and the temperature of the place should be kept up to 55 degs. F. A loose box in a stable in which there is no horse and which is kept *clean* makes a capital place; but unless the stable is kept very clean, it smells of ammonia, which is fatal to a dog suffering from distemper, because pneumonia and bad eyes are sure to develop.

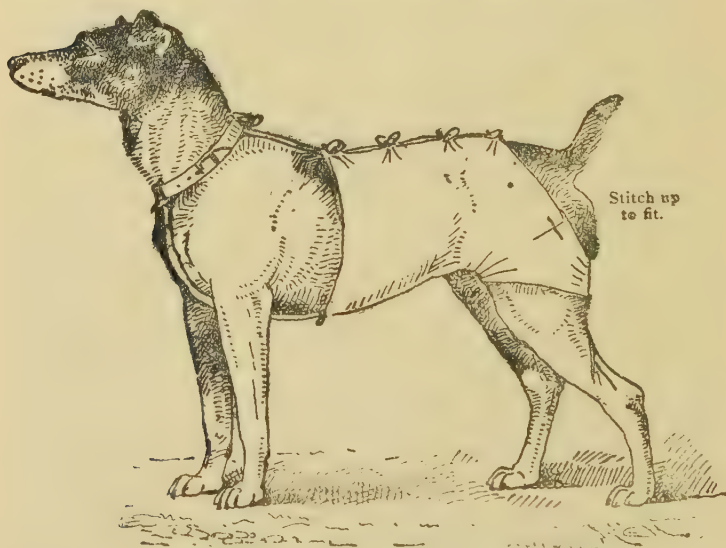
Sick dogs should always be kept separate, if possible. It is a great mistake to put three or four together.

As to diet for patients, see article on *Invalid Foods*; when they will not take food voluntarily, a small quantity, varying according to size of dog, must be given often, about every two hours or oftener, day and night. It is useless to feed a dog well for sixteen hours, and to leave him to chance for eight. It is often during the night, when the system is at its lowest, that a little good nourishing food, with some stimulant, is most wanted; and *it is this attention that saves the patient in many cases.*

The preparation of food is most important. It should either be done by oneself, or under the personal superintendence of a responsible person. All milk food should be made fresh three times a day, and any that is left over should be thrown away. All feeding utensils must be kept scrupulously clean, and the spoon, bottle, or feeding-cup that is used for food or medicine should be washed and dried immediately after being used, ready for next time. The cooking utensils also must be kept scrupulously clean. If these things are not attended to, diarrhœa and sickness result, and the patient is weakened, and perhaps has a relapse. Also keep the sick dog scrupulously clean. Each time after feeding clean his lips with a little weak solution of Condyl's fluid on a pad of cotton wool—which should be burned immediately after using—and dry with soft cloth; also cleanse the fundament and prepuce once a day with the same pre-

paration, and keep the eyes free of discharge with a little weak boracic acid lotion, and clean the mouth and teeth with a weak solution of permanganate of potash. *This is very important.*

As well as the patient, the room or kennel requires frequent attention. Do not make the air stuffy with strong disinfectants, but it is a good plan to sprinkle the



A coat covering the hind parts of a dog—useful after operations upon the abdomen.

floor, whether of a kennel or room, with pine sawdust, and if the flooring be wood, to cover it over with sheets of old newspapers, which may be covered with sawdust, so that all evacuation can be carried away and burnt, for when a dog is very ill he ought not to be allowed to go out. There are some dogs who are so clean that they will not make themselves comfortable in a room, and it becomes absolutely necessary to let them out rather than make them worse by keeping them in. But a dog

may be kept for some hours, twelve or even sixteen, to see if he will not give way. Once he has relieved himself in the room, and finds he is not scolded, he gains confidence, and is not so particular in the future. To make an obstinate dog do what is necessary in a room, especially when the weather is bad, and when perhaps it would be fatal to let him out, I give either a glycerine suppository, dose of aperient medicine, or an enema, which invariably has the desired effect.

Do not always be fidgeting an invalid. Do what is necessary, and then leave him alone.

Take the temperature regularly three times a day, *at the same times each day, and keep a record on a chart*; also, if you can, at the same time count the pulse and the number of respirations per minute, and record them for reference. In all cases of severe illness, it is a good plan to put the dog in a flannel jacket, as depicted in the illustration. This can be carried forward right up to the fore legs and, if necessary, right up to the collar, leaving two holes for the front legs.

The points to be remembered are:—

1. Dry, well-ventilated, light quarters of a proper temperature.
2. Cleanliness of patient.
3. Cleanliness of the surroundings.
4. Cleanliness of everything used for the patient.
5. Cleanliness of nurse.
6. Not to fidget the patient, but to give him food and medicine at regular stated times.
- 7 To keep the body warm, but the air he breathes fresh and cool. Fresh air never kills, but foul air often does.

The best kind of bed for a small dog being nursed in a room is a basket with a cushion in it, which should be covered over with a white cloth or towel to be changed

daily. For a kennel or loose box a bench should be supplied, raised a few inches from the ground, and long and wide enough for the dog to lie out full length. Straw makes a good bedding, and should be changed often.

In nursing surgical cases, cleanliness is even more important than in medical cases, and the patient should be kept under similar conditions. It is important to take the temperature twice a day at least, for a rise of temperature is the first symptom of suppuration in a wound, and shows that it is not healing in a normal manner; or if healing, suppuration points to pus being pent up somewhere, and the surgeon's attention is required.

Unless contra-indicated or otherwise directed, always keep a vessel easily available filled with fresh clean water for drinking.

Clean bandages and dressing should be put on every time a wound is dressed, and the bandages taken off should be washed in some disinfectant like Jeyes' fluid, well rinsed, dried and ironed, and rolled up ready for use again. The old dressing which has been in contact with the wound should be burnt.

Bitches in the nest with puppies require, for the first week at least, as careful nursing as an invalid, and the temperature for the first week should be regularly taken. It is always above normal during the first few days, about 102·4 degs. F. (taken in the bowel); but if it rises over 103 degs. F., the case is not taking a normal course, and an examination should be made. Possibly there may be a dead puppy or one of the foetal envelopes (after-births) left behind, which, of course, must be immediately removed, and the womb syringed out with a solution of permanganate of potash, one grain to the ounce of warm water; from two ounces to a pint¹ of the solution should be used at a time, and the injection repeated in a few hours. A saturated solution of boracic acid or "chinosol",

¹ According to the size of the dog. See p. 81.

one grain to the ounce, may be used instead of the potash. In bad cases, when the temperature is over 104 degs. F., when fœtid, decomposed matter is coming away, a solution of perchloride of mercury, 1 in 3000, is the best remedy; but about a couple of minutes after giving an injection of this drug, the womb *must* be thoroughly washed out with a plentiful enema of warm water.

OBESITY (Too Fat) :

Symptoms: This is a common complaint of elderly pet dogs, especially pugs; but it is not, as generally supposed, always the result of overfeeding and want of exercise, for many dogs will put on flesh in spite of careful dieting, and then I generally put it down to a contented mind, and partly to heredity.

Treatment: In treating these cases, medicines are not advisable except occasionally giving a free saline purge. If any good is to be done it must be by dieting; and whatever food is given should be dry. Raw, or nearly raw, meat is the best food, for nearly all fat dogs put on this diet lose weight considerably, and at the same time improve in health by becoming brighter and livelier, and more ready to take exercise; but the meat must be given sparingly, say for a small dog like a pomeranian, one ounce and a half twice a day; and for a dog the size of a fox-terrier, three ounces twice a day. The worst of this food is, it never seems to satisfy; in fact, a dog fed on raw meat always seems hungry. Raw meat does not answer in every case, for the dog sometimes gets fatter instead of thinner, as required. Then a diet of dry biscuit should be tried. For small dogs, Spratts' pet-dog biscuits should be given—whole, if they will be taken that way, otherwise they must be broken up in small pieces, and no other food at all given; and the more exercise the better. If this does not answer, try "Freeman's digestive rusks"; given dry. Always fresh cold water to drink; no milk.

ŒSTRUM, or the period of menstruation of the bitch, generally appears for the first time when the bitch is about eight or nine months old. With some foreign breeds, as in Chows particularly, it often occurs for the first time sooner, even when the bitch is five or six months old. Occasionally, with very small bitches, the first heat may not appear until she is a year old. In some of the largest breeds (Irish wolf-hounds) the first period may not appear until the eighteenth month. Once the period has commenced, it generally occurs regularly twice a year, but in a few abnormal and exceptional cases every three or four months. The heat generally lasts from three to four weeks—that is, right from the commencement until the end.

The condition is recognized by the external parts—vulva—swelling, and a slight mucus discharge, which continues for about a week; then the discharge is pinkish, and after a few days blood-coloured. This latter condition continues for about eight or nine days, to be followed by a mucous discharge again, until the heat has ceased, when the parts have assumed their normal size.

When a bitch does not come in season and there is a total absence of menstruation, and her health is good, her food and hygienic conditions what they should be, then try $\frac{1}{10}$ th to $\frac{1}{4}$ grain oxalic acid in water twice a day. If anæmic give iron and arsenic, plenty of outdoor gentle exercise, good nourishing food, including raw meat.

OPHTHALMIA (Inflammation of the Eye) :

Symptoms: Generally both eyes are affected, the membrane (conjunctival) is intensely inflamed, and there is a good deal of purulent discharge. There is intolerance of light, and as a consequence, the lids are kept partly, if not quite, closed.

Treatment: Keep the dog for a time in a darkish

room, and bathe the eyes three or four times a day with the following lotion:—

Recipe:

Laudanum	1 drachm.
Sulphate of Zinc	10 grains.
Rose Water to	6 ounces.

Anoint the edges of the lids at night-time with half strength “golden eye ointment” or white vaseline to prevent their sticking together.

A good purge is beneficial.

Care must be taken to prevent the dog rubbing the eyes, or he may severely injure them; and bandages should be placed round the ankles covering the dew-claws. Renew these when dirty.

ORCHITIS (Inflammation of the Testicle) :

Symptoms: In young dogs it occurs as the result of injury; in old ones it arises from constitutional causes. The testicles become swollen and very painful, the scrotum is red and shiny. The dog walks and sits down with difficulty.

Treatment: Complete rest. If much temperature present, a febrifuge should be given (aspirin, from two to ten grains twice a day). If the vessels of the part are distended, leeches may be used over the inguinal canal to relieve tenseness and pain. Give a purge, as from two to ten grains¹ of jalapin. Foment the parts often with hot poppy-head tea, made by boiling a couple of crushed poppy-heads in a quart of water for ten minutes; then strain. Sometimes the application of an ice-bag gives more relief than the hot application; this is, however, rarely the case, and *never* safe with old dogs.

OTITIS, OTORRHŒA : *See* EAR CANKER.

OZÆNA :

Symptoms: There is a chronic purulent or mattery

¹ According to the size of the dog. See p. 81.

discharge from the nostrils which often has a very offensive odour.

Treatment: After covering dog's eyes by wrapping duster round head and tying under jaws, syringe the nose thoroughly every day with from ten to thirty drops ¹ of tincture of hydrastis, mixed with one ¹ to four table-spoonfuls of tepid water. Give cod-liver oil, also iron and quinine tonic pills.

PALPITATION OF THE HEART:

Symptoms: Increased action of the heart; if bad, it beats with a thumping action, shaking the whole body, the dog is restless and pants, and may in some cases faint.

Treatment: Put the dog on a raw meat diet for a time, and avoid violent exertion, though he may have moderate walking exercise; avoid excitement and fatigue; exercise in the shade, or cool part of day. Give aperient medicine and a course of the following mixture:—

Recipe:

Tincture of Digitalis	.	.	90 minims.
Bromide Potassium	.	.	120 grains.
Water to	.	.	6 ounces.

From one teaspoonful ¹ to a tablespoonful to be given three times a day one hour after food.

PARALYSIS:

Symptoms: Not uncommon after distemper, and may follow fits; injury to the back and rheumatism is frequently the cause. More often seen in dachshunds than other dogs. The whole body may be affected, including all four legs, but the back part of the body, including the two hind legs, is the favourite seat of the disease, following "lumbago". The dog is unable to stand, but drags the back legs after him when he moves. The bowels are constipated, and the dog is unable to pass water, though later it may dribble away. The dog may not be ill in

¹ According to the size of the dog. See p. 81.

himself, and will generally take his food. When the seat of the mischief is in the brain, all four limbs are useless, and the dog lies on his side in a miserable, helpless condition, often even being unable to raise his head from the ground.

Treatment: The condition of the bowels and bladder must first be attended to. Aperient medicine should be given, and if it does not act in a few hours, an enema of warm soapy water (from two tablespoonfuls¹ to half a pint) administered, and repeated in a couple of hours if it does not operate. The urine must be drawn off with a catheter if relief cannot be obtained by pressure over the seat of the bladder. This, as a rule, is sufficient, and should be repeated two or three times a day, until the dog is able to relieve himself. If a catheter has to be used, twice a day should do, but care must be taken to keep the instrument very clean. It is a good plan to keep it lying in a saturated solution of boracic acid when not in use.

When the paralysis is the result of an injury, do not give any medicine at first, except a purgative, but keep the patient quiet and allow time for the injured parts to heal or get free from bruising. If there seems to be much pain, give two or three times a day from three¹ to fifteen drops of liquor morphia in a little water. Do not let the dog lie always on one side, but change him over about every four or six hours. If in about a week there are no signs of movement, or return of strength in the legs, give the following pills and give gentle manipulative massage twice a day:—

Recipe:

Powdered Nux Vomica	1 to 6 grains. ¹
Reduced Iron	6 to 30 grains.
Ergotine	6 to 24 grains.

Common Mass. sufficient.

Mix.

¹ According to the size of the dog. See p. 81.

Divide into 12 pills—one to be given twice a day after food. Later, if the paralysis continues, the following pills may be tried, and the former discontinued:—

Recipe:

Anhydrous Phosphate of Iron	3 to 12 grains. ¹
Sulphate Quinine	2 to 12 grains.
Strychnine	$\frac{1}{16}$ th to $\frac{1}{5}$ th grain.
Arsenic	$\frac{1}{12}$ th to $\frac{1}{4}$ th grain.
Common Mass. sufficient.	
Mix.	

Divide into 12 pills. One to be given two or three times a day after food. The dog should have electric treatment twice a day for about half an hour each time. A continuous current battery is best, and a blister should be applied to the loins, from the two last ribs to the points of the hips, and from two to four inches wide.¹

When all four legs are affected, as the result of some injured or diseased condition of the brain, the treatment should be the same as previously mentioned, except that a blister should be applied to each side of the neck, along the course of the spine as far as middle of dorsal vertebræ, instead of over the loins. The best blister to use is the *Liquor Epipasticus* (see BLISTERS). Two days later, the parts may be carefully washed and boracic ointment applied. Benefit is also derived in these cases by having the muscles of the limbs massaged (towards the heart), and ultra-violet rays may be used under professional advice.

When paralysis is the result of rheumatism—and in these cases it is generally the back limbs and loins affected—the attack commences with pain and stiffness across the loins. Give first, after a purge, for a week or so, suitable medicine for rheumatism, and then later, if the patient does not improve, treat as for ordinary paralysis. Cases of paralysis are often tedious, and continue a long

¹ According to the size of the dog. See p. 81.

time, but in the end, unless the spine has been seriously injured by some accident, they generally recover.

PARAPHYMOSIS :

Symptoms: Dogs, particularly some of the small ones, sometimes get the penis protruded out of the sheath, and if the orifice is at all small it contracts on the protruding part, and cannot be relieved without assistance. The part becomes swollen and very painful, and if it is not noticed soon after happening, the point of the penis becomes much inflamed and congested.

Treatment: Place dog on its back, being held by second person. A little oil should be poured on the red protruding part, and the sheath should be taken hold of at each side and pulled forcibly over it.

In some cases, when it is very much swollen, it is necessary to apply ice to the protruding part before it can be returned as above.

PARTURIENT ECLAMPSIA :

Symptoms: This occurs in nervous and excitable bitches two or three weeks after pupping. The bitch is unable to stand, or does so with great difficulty. She generally lies on her side, with legs outstretched and head drawn back, panting violently and frothing at the mouth. The attack, though very distressing, generally lasts some hours, leaving the bitch much prostrated; it is seldom attended with fatal results.

Treatment: As soon as the bitch is able to swallow, give from five¹ to fifteen grains each of bromide of potassium and hydrated chloral in water. The dose may be repeated in two or three hours if necessary. Examine mammary glands; if swollen and containing too much milk, or if tense and hard, strip teats and apply soothing compresses as in mastitis and keep the mammary glands empty until symptoms cease. Give saline purge.

Once a bitch has had an attack of this complaint she

¹ According to the size of the dog. See p. 81.

generally has another in the course of a few days, but it may be prevented by giving some bromide of potassium regularly for a time—as from three¹ to ten grains two or three times a day with the food or in a little water.

Diet: Fish, tripe, and milk food may be generously given, but avoid red meat until quite recovered.

PEDICULI (Lice): A contagious, animal, parasitic disease, "*Pediculosis*", characterized by the presence of pediculi, their marks on the skin and the irritation caused by the parasites.

Symptoms: Small, bluish-grey parasites generally found with the head stuck in the skin—standing on their heads, as it were. They may be seen on all parts of the dog, but the favourite places seem to be the nose, ears, and underneath the chest. The lice lay their eggs or nits on the hair, to which they stick by a very adhesive material and are difficult to remove.

These insects cause intolerable irritation and, as a consequence, the dog is always scratching, and loses condition.

Treatment: Bathing in Jeyes' disinfectant fluid, diluted eighty times with water—that is, four tablespoonfuls to a gallon—is a good remedy, but it is necessary to continue the treatment for some time so as to destroy the young lice as they escape from the eggs. Another effectual remedy is bathing the dog in kerosene one part, separated milk six parts, well mixed together. But neither of these remedies destroys the nits. To do so it is necessary to mix either the Jeyes' fluid or the kerosene with oil in the proportions previously mentioned, and thoroughly rub it all over the dog and leave it on him for some days; in fact, it is advisable to repeat the dressing again four days later, and not wash him for a week.

To get rid of the lice entirely, the kennels, also collars, leads, brushes, in fact everything belonging to the dog,

¹ According to the size of the dog. See p. 81.

should be thoroughly disinfected by fumigation and washed in a strong solution of Jeyes' fluid or Cook's three per cent. mercurial soap; rinse after.

When a sick dog, as one suffering from distemper, is infested with lice, washing, of course, is out of the question at such a time. The only thing to do, then, is to use some effectual insecticide powder and a fine comb.

All dogs out of health get more seriously affected than strong, healthy ones. Cats, rats and mice are sources of infection, as well as other dogs.

Vinegar, dilute acetic acid, soda and borax solutions are of value in removing the nits, and should be well rubbed into the hair on which the nits are fastened.

PENIS, Growths on (Contagious Granulomas):

Symptoms: Dogs, especially those used for stud, and particularly bulldogs, are liable to growths on the penis. They are pink or red in colour, and look not unlike a raspberry, but they are irregular in shape and easily break down, the tissues being soft, and easily bleed. The dog suffering in this way often has drops of blood at the orifice of the prepuce. These growths are contagious, and a dog suffering from them should on no account be used for stud purposes. The growths may not only be on the point of the penis, but may be situated far back behind the knot. Bitches are also liable to these growths, and unless they are removed and cured should not be mated.

Treatment: The growths should be removed under an anæsthetic by being scraped off, and the roots cauterized sparingly with a saturated solution of chromic acid, which should be applied on a thin stick. The caustic should be repeated in a week. It may be necessary to repeat it several times. Other growths of a malignant nature may appear on the penis and in the vagina and uterus of the bitch, but are not common.

PERICARDITIS (Inflammation of the Heart's Sac) :

Symptoms: It is difficult to detect in the dog. There is some pain on the left side of the chest, the pulse is quiet and small, the temperature is two or three degrees above normal; the breathing is short and quick, and there is a dry cough. If the heart be examined with a stethoscope, a friction sound of a to-and-fro rubbing character, superficial, increases on pressure, not simultaneous with systole and diastole, and eventually disappears. It should not be confounded with an endocardial murmur. This friction sound is heard with each movement of the heart, although the heart sounds may be distant. When fluid collects in the sac, as it often does, the usual heart sounds are almost inaudible. There is venous congestion.

Treatment: Apply hot linseed-meal poultices to left side of chest; keep the bowels freely opened with purgative medicine. If temperature is very high, give the following mixture:—

Recipe:

Salicine	.	.	.	.	2 drachms.
Tincture Digitalis	.	.	.	.	1½ drachms.
Simple Syrup	.	.	.	.	1 ounce.
Water to	.	.	.	.	6 ounces.

From one teaspoonful to a tablespoonful ¹ three or four times a day.

When fluid collects, give from half ¹ to two grains of iodide of potassium in water three times a day. Complete rest and quiet; warmth; nourishing, light food; go *very gradually* back to gentle exercise of a very limited nature for some time.

PERIOSTITIS (Inflammation of Membrane covering Bone) :

Symptoms: Generally result of injury. Parts very

¹ According to the size of the dog. See p. 81.

painful and swollen, the skin covering the inflamed spot discoloured, very often purple. An abscess may form. In these cases there is a good deal of constitutional disturbance, the temperature is high, perhaps 104 or 105 degs. F., the pulse quick, and the dog refuses food. Blood poisoning may result.

Treatment: Keep patient absolutely quiet, and give a good purge. Apply following lotion constantly on lint:—

Recipe:

Goulard's Extract of Lead	..	1 drachm.
Laudanum		2 drachms.
Water to		6 ounces.

Or an ice-bag may be applied intermittently.

If an abscess forms, it must be freely opened, and afterwards apply hot linseed-meal poultices, dusted over with powdered charcoal; treat as for abscess.

PERITONITIS (Inflammation of Peritoneum):

It may be (1) idiopathic, that is primary, not depending on another disease; (2) traumatic, due to injury; (3) secondary to a suppurative process elsewhere. There are other causes, such as obstruction of bowels with infection, abscesses on liver.

Symptoms: The abdomen is hard and very painful to the touch. The breathing is quick, and the dog often utters a grunt with each breath. The pulse is very quick, and the temperature rises to 105 degs. F. or over, with diffuse pain, and the patient vomits frequently, especially after taking food or even water, and quickly collapses, death often taking place within twenty-four hours of the commencement of the illness.

Treatment: Apply flannels wrung out in hot poppy-head tea, made by boiling for ten minutes a couple of crushed poppy-heads in a quart of water. Give from five to twenty drops ¹ of laudanum every four hours in water; if the dog cannot retain it, inject under the skin from

¹ According to the size of the dog. See p. 81.

the twentieth to the eighth of a grain¹ of acetate of morphia, in a few drops of brandy, which may be repeated in six hours. Call in professional aid.

Give Vichy water and milk in equal parts to drink, and a little Brand's essence occasionally, or feed per rectum every four hours.

PERSPIRATION :

Symptoms: A dog does not perspire from the skin when in health, but he occasionally does when suffering from some skin diseases; and puppies in the nest, when ill and not thriving, will become quite wet from perspiration. It is always a bad sign, and shows that the dog or puppy is in a very serious condition.

Treatment: In the case of puppies, give the mother a dose of castor oil, and dust the youngsters all over two or three times a day with finely-powdered boracic acid one part, kaolin eight parts, mixed together. In the case of adult dogs, give daily a sulphur bath, made by dissolving one ounce of sulphurated potash in four gallons of warm water; after well drying, dust the inside of the thighs, abdomen, armpits, etc., with the powder recommended for puppies. For medicine give a course of arsenic, as from one¹ to eight drops of Fowler's solution in water after food.

PHIMOSIS : *See* PREPUCE.

PHTHISIS (Tuberculosis) : *See* CONSUMPTION.

PILES (External) : (So-called), but dogs do not suffer from piles; old dogs occasionally have a form of external soft nodular growths which may look somewhat like piles (hæmorrhoids) but are not of the same structure or nature, yet often go by the name even by professional men.

Symptoms: The anus becomes red, inflamed, and swollen; small red pimples form about the part, inducing

¹ According to the size of the dog. See p. 81.

a good deal of irritation, and causing the dog to drag the hind parts along the ground.

Treatment: Dab the parts often with the following lotion:—

Recipe:

Goulard's Extract of Lead	.	.	1 drachm.
Tincture of Opium	.	.	1 drachm.
Water to	.	.	6 ounces.
Mix.			

Or the following ointment may be tried:—

Goulard's Extract of Lead	.	.	1 drachm.
Finely-powdered Boracic Acid	.	.	1 scruple.
Cream	.	.	1 ounce.
Mix.			

Apply night and morning.

Some cooling medicine, as the following, does good:—

Cream of Tartar	.	.	1 ounce.
Bicarbonate of Potash	.	.	1 ounce.
Milk of Sulphur	.	.	1 ounce.
Powdered Sulphate of Magnesia	.	.	1 ounce.

From sufficient to cover a threepenny-piece to a teaspoonful ¹ twice a day with food. These nodular growths round the anus in the dog are liable to become malignant in old age. Iodex when applied with persistence, and *licking is prevented*, is the best remedy.

¹ According to the size of the dog. See p. 81.

TABLE OF POISONS AND ANTIDOTES

<i>Name</i>	<i>Character of Poison</i>	<i>Symptoms of Poisoning</i>	<i>How Death is Produced</i>	<i>Treatment and Antidotes</i>
Arsenic and its compounds	Corrosive	Violent burning pain in stomach, retching, thirst, diarrhoea, burning in urinary organs, suppression of urine, dryness in throat, pulse small and frequent	..	Stomach pump or emetics, $\frac{1}{10}$ th grain apomorphia, hypodermic, fresh moist peroxide iron or olive-oil magnesia, lime water, strong purgatives
Carbolic acid and creosote	Corrosive	Difficult breathing, vomiting, burning pain in mouth and stomach, loss of consciousness, collapse, sub-normal temperature, urine dark and partially suppressed, dark in colour, pupils much contracted, characteristic odour	Respiratory and cardiac paralysis	Stomach pump soft tube, wash out stomach with pure glycerine in large quantity, warm gruel, atropine
Chloroform and ether	Anæsthetic	Two methods of taking: inhalation, swallowing; symptoms in latter case delayed. (1) Slight stimulation; (2) excitement and incoherence; (3) insensibility and relaxation	Usually paralysis of heart	Draw tongue forward, plenty fresh air, artificial respiration, alternating hot and cold douche to head and neck, strong ammonia or amyl nitrite to smell, atropine, 2 drops hydrocyanic acid on back of tongue

TABLE OF POISONS AND ANTIDOTES

Name	Character of Poison	Symptoms of Poisoning	How Death is Produced	Treatment and Antidotes
Coal-gas	Asphyxiant	Headache, giddiness, loss of muscular power, unconsciousness, pupils dilated, breathing laboured, coma, odour of gas	Asphyxia	Plenty fresh air, artificial respiration, ammonia to smell; stimulants, oxygen, hot coffee, hot and cold douches alternately
Cocaine	Deliriant	Faintness, giddiness, nausea, pulse small, rapid, intermittent, severe prostration, respiration slow and feeble	Spasm of heart and muscles of respiration	Stimulants and amyl nitrite
Ergot	Abortive	Tingling in feet, cramps in extremities, dizziness, weakness, pupils dilated, pulse small, vomiting, retching, and diarrhoea	..	Evacuate, emetics, quick purgatives, castor oil or Epsom salts; tannic or gallic acid, stimulants, amyl nitrite, recumbent position
Insects (poisonous)	..	In most cases slight: wasps, hornets, tarantula, scorpions, more serious, pain, swelling, fever, erysipelas, suppuration and gangrene, with death	..	In milder cases ammonia dabbed on, also soap or other alkali. In <i>graver</i> cases, see SNAKE-BITES

TABLE OF POISONS AND ANTIDOTES

<i>Name</i>	<i>Character of Poison</i>	<i>Symptoms of Poisoning</i>	<i>How Death is Produced</i>	<i>Treatment and Antidotes</i>
Iodine and its compounds	Specific irritant	Pain in throat and stomach, vomiting, purging; vomit is yellow, or blue if starchy food is present in stomach, giddiness, faintness, convulsive movements	Paralysis of heart	Evacuate, starch, amyl nitrite, morphine
Lead and its compounds	Specific irritant	Dryness of throat, great thirst, colic relieved by pressure, abdominal muscles are unusually rigid, cramp in legs, constipation, paralysis of extremities, convulsions; in the chronic forms a blue line at margin of gums	••	Evacuate, emetic when recent, dilute sulphuric acid, Epsom salts, morphine milk and white of egg, iodide of potassium to eliminate poison in chronic cases, poultices to abdomen
Mercury and its compounds	Specific irritant	Burning heat in throat and stomach, acrid metallic taste, vomiting, diarrhoea with blood, lips and tongue white and shrivelled, pulse small and frequent, pain may be absent; death in coma or convulsions; secondary symptoms, hectic fever, fetid breath, gums swollen, salivation	••	Albumin in some form, raw white of egg, evacuate, iodide of potassium, opium

TABLE OF POISONS AND ANTIDOTES

<i>Name</i>	<i>Character of Poison</i>	<i>Symptoms of Poisoning</i>	<i>How Death is Produced</i>	<i>Treatment and Antidotes</i>
Mushrooms or fungi (several forms poisonous)	Inebriant	Gastro-intestinal catarrh, nausea, heat and pain, vomiting and purging, fainting and convulsions, small frequent pulse, pupils dilated, delirium, stupor, death	..	Evacuate, quick purgative, Epsom salts, stimulants
Opium, laudanum, morphine	Narcotic	Preliminary mental excitement, acceleration of heart; soon headache, weariness, sensation of weight in limbs, sleepiness, diminished sensibility, contracted pupils, patient roused with difficulty, later this becomes impossible; reflexes abolished, jaw falls, respiration slow, irregular and stertorous; pulse weak and compressible	Respiratory paralysis	Evacuate, apomorphia $\frac{1}{10}$ th grain under skin, rousing, ammonia, strong black coffee, douche, atropine, amyl nitrite, strychnine, artificial respiration, battery, oxygen
Phosphorus	Specific irritant	Vomition and pain; vomit may be luminous in the dark; characteristic odour, weakness of heart's action, tendency to hæmorrhage; coma or delirium; albumin in urine	Failure of respiration and circulation	Pump or emetic, sulphate of copper 3-5 grains every half hour, Epsom salts; never give oil or fat

TABLE OF POISONS AND ANTIDOTES

<i>Name</i>	<i>Character of Poison</i>	<i>Symptoms of Poisoning</i>	<i>How Death is Produced</i>	<i>Treatment and Antidotes</i>
Prussic or hydrocyanic acid	Hyposthenisant (very deadly)	Difficult breathing, vomiting, purging, spasms, rigidity, cessation of heart's action, characteristic odour, sudden death with screaming from pain	Asphyxia	Dilute ammonia; opium to relieve pain, alternate sprinkling with hot and cold water, atropine and heart stimulants, artificial respiration; not very hopeful
Santonine	Irritant	Disturbance of colour vision and hearing, dizziness, pain in abdomen, convulsions, stupor	Asphyxia	Evacuate, chloral stimulants,
Snake-bite (adder or viper only poisonous English snake)	..	In the main sharp pain in bitten part, rapidly swelling and spreading, part becomes livid, fainting, vomiting, convulsions, pulse small, frequent and irregular, difficult breathing	Paralysis of cardiac and respiratory centres	Freely open bitten part and rub in permanganate of potash freely and strong ligature between bite and the heart. Give brandy or sal volatile freely, the latter well diluted

TABLE OF POISONS AND ANTIDOTES

<i>Name</i>	<i>Character of Poison</i>	<i>Symptoms of Poisoning</i>	<i>How Death is Produced</i>	<i>Treatment and Antidotes</i>
Strychnine and nux vomica	Convulsant	Tetanic convulsions coming on in paroxysms at varying intervals of from 5 to 30 minutes; head, body and legs stiff during paroxysms, pupils dilated, respiration impeded, pulse feeble and rapid, anxiety	Asphyxia during paroxysm or collapse	1 st grain apomorphia hypodermically is an emetic and antidote, keep patient quiet, amyl nitrite
Tartar emetic, antimony	Corrosive	Violent vomiting, pain, purging, difficulty in swallowing, cramps, thirst, great weakness	Paralysis of heart	Tannic acid, demulcents, opium, alcohol, ether
Turpentine	..	Characteristic odour, intoxication, contracted pupils, stertorous breathing, coma, collapse, tetanic convulsions, urine smells like violets	Paralysis of respiration	Evacuate, magnesium, sulphate, morphine, demulcent drinks
Zinc oxide	Corrosive or irritant	Corrosion of lips and mouth, pain and burning, incessant vomiting blood - stained, quick pulse and respiration, difficult breathing, dilated pupils, epileptiform convulsions, paralysis, coma	..	Sodium or potassium carbonate, milk, eggs, tannic acid, morphia hypodermically, poultices to abdomen

POISONS :*Strychnine:*

Symptoms: The quickness of its action depends on how it has been administered. If in a liquid form, the symptoms commence in a few minutes, but if it has been given in a piece of meat, it may be an hour or so before any signs appear. Then the animal becomes restless; the limbs are stiff, and the dog walks with difficulty, and with the hind legs stretched apart. Occasionally there is a violent twitching or jerk of all the muscles of the body, as if the dog had a galvanic shock; then he suddenly falls to the ground, often in a forward direction, and in acute tetanic spasm. The limbs are extended, and as stiff as pieces of iron, the fore legs in a slightly forward direction, and the hind legs in a backward direction. The head is drawn back, and the back arched and the tail extended and stiff; the eyes protrude, the mouth is firmly closed, and the pulse extremely quick. Respiration during the spasm, which lasts about half a minute or so, entirely ceases. At the end of the attack the dog gives a few heavy sighs, and then commences to pant hard. The least movement or touch, or even a noise, will cause a return of the convulsions, which continue at frequent intervals, unless the dog is relieved by some suitable antidote, or until death occurs, which generally takes place during a paroxysm. In some cases, though the acute symptoms may have been checked by treatment, the dog afterwards dies from the effect of the exhaustion.

Treatment: In all cases of poisoning, more especially when due to strychnine, prompt action is required, and means should at once be taken to make the dog disgorge what has been swallowed. An emetic that will act well and quickly must be at once administered; for this there is nothing better than a dose of hydrochlorate of apomorphia. This medicine acts in two ways: it is the

quickest and surest emetic; and it also relieves the spasms. The dose is the twelfth of a grain for small dogs, and about a quarter of a grain for large ones, given in a teaspoonful of water; but the best way of administering it is by injecting it under the skin with a hypodermic syringe; then from three¹ to ten minims of the 1 in 50 solution is to be given. I always advise persons who keep a number of valuable dogs to have a solution of apomorphia by them ready for emergency, for whilst it is being obtained the patient may die, and if huntsmen would always carry a small bottle of the solution with them many a valuable hound's life might be saved. When this medicine is not at hand, some other emetic must be given. A lump of washing soda (size of hazel nut for fox-terrier, two lumps for larger dog). Ordinary table salt can always be quickly procured, and from one teaspoonful¹ to a tablespoonful should be given in warm water. If the dose does not act freely, repeat it in a few minutes; or instead, give from five¹ to twenty grains of powdered ipecacuanha, or from half¹ to three grains of tartar emetic. Either of these may be shaken dry on the tongue. The dog must be made to vomit somehow; but anything like salt, requiring a quantity of water, is difficult to administer, as the dog's mouth is often tightly clenched, and trying to open it induces paroxysm, during which time it is impossible to give anything by the mouth; here the advantage of the subcutaneous injection of apomorphia comes in. This may also be repeated in a quarter of an hour, if the vomiting has not been free. Besides the emetic, some medicine is necessary to relieve the spasms. For this there is nothing better than chloral and bromide of potassium. From fifteen¹ grains to two scruples of each may be given in from one¹ to three tablespoonfuls of water, if the dog can be made to swallow; and half

¹ According to the size of the dog. See p. 81.

the quantity of each may be given again in twenty or thirty minutes, and repeated, if necessary, in half an hour. When the dog is unable to swallow, from two¹ to six minims of nitrite of amyl, held to the nose on a pocket-handkerchief, is useful. This may be repeated in a quarter of an hour, or chloroform may be given. Also, inject into the rectum from one-half¹ to two drachms of laudanum in from one¹ to four tablespoonfuls of water, which repeat in a quarter of an hour, and again in another fifteen minutes if the paroxysms continue.

After the severe symptoms have passed, and the dog is weak and prostrate, from a quarter¹ to two teaspoonfuls of brandy added to some milk may be administered, and repeated every half hour for a time.

Arsenic:

Symptoms: The dog, shortly after taking the poison, becomes restless. Violent sickness soon commences, the vomited matter being mixed with blood. There is also acute diarrhœa, accompanied by severe straining, and a good deal of blood is often passed with the motions. The dog is extremely thirsty, has an anxious countenance, showing evident signs of great pain, and breathes heavily. There may be severe convulsions, followed by paralysis, collapse, and death.

Treatment: The vomiting at first should be encouraged by giving an emetic, as three¹ to ten drops of the 1 in 50 solution of apomorphia with a hypodermic syringe. If this is not at hand, give from one-twelfth¹ to a quarter of a grain of the same medicine in a teaspoonful of water. Failing the apomorphia, give from five¹ to twenty grains of sulphate of zinc in a little warm water, or even salt and water. The vomiting may be kept up by getting the dog to drink warm water. Besides endeavouring to free the stomach of all the arsenic, an antidote is required to remedy the ill effect of the poison. For this there is

¹ According to the size of the dog. See p. 81.

nothing better than dialysed iron given in large doses, as from half¹ a teaspoonful to a tablespoonful every half hour until several doses have been given. This may be followed by a large dose of castor oil. About an hour afterwards some carbonate of bismuth should be given, shaken dry on the tongue, from ten¹ grains to a drachm, which may be repeated every hour or two. When there is great prostration, stimulants, as brandy, are required, and when the patient is unable to swallow or retain it in the stomach, from one-half¹ to a drachm may be injected under the skin frequently. If the body is cold wrap the dog up in hot blankets, and place hot-water bottles around him. As improvement takes place, milk thickened with arrowroot, barley, or rice water may be given. If the dog appears in much pain after the acute stage has passed, small doses of laudanum may be given, and hot linseed poultices applied to the stomach.

In chronic cases of poisoning by arsenic—a not uncommon occurrence, as this is a favourite remedy for skin diseases, and too much is often given, or the medicine is given too long—the dog loses appetite and condition, becomes very weak and emaciated, frequently vomiting a white, frothy mucus as well as food.

There is often severe diarrhœa, and blood is passed with the motions. There are signs of tenderness on pressure over the region of the stomach, and excessive thirst. The membrane (conjunctiva) lining internal surface of eyelids is red and congested.

Treatment: Discontinue the use of the arsenic immediately, give tonics, as reduced iron, from one¹ to three grains made into a pill with an extract of gentian. If the sickness continues, give from three¹ to ten grains of carbonate of bismuth, shaken dry on the tongue, every three or four hours.

For food, lean raw mutton, in small quantities, every

¹ According to the size of the dog. See p. 81.

three or four hours, and milk to drink. If the latter is not retained, try it peptonized with Fairchild's powders, which can be obtained at most chemists. When the sickness is very severe, Brand's beef essence is recommended, given in jelly form, in small quantities frequently.

Phosphorus:

Symptoms: There is vomiting, but not to the same extent as is seen in cases of arsenic poisoning. The vomited matter, when taken into the dark, *is generally luminous*, and it gives off that well-known odour of phosphorus which resembles the smell of garlic; the same perfume may be detected in the breath. If the dog survives the acute stage, in the course of a few days the symptoms of jaundice may develop; there is also a tendency to hæmorrhage from the nose. Poisoning by phosphorus is often followed by convulsions, but sometimes coma; in other cases noisy delirium.

Treatment: In treating cases of poisoning by phosphorus, oils and other greasy substances must be always avoided, as it easily dissolves in anything of an oily nature, and when such occurs greater mischief happens. An emetic of sulphurate of zinc, from five¹ to twenty grains in warm water, should be given as quickly as possible, and repeated in ten minutes. If it has not acted, salt and water or ipecacuanha wine may be given instead of the zinc, when the latter cannot be obtained.

After the sickness has ceased, administer a free dose of Epsom salts, and keep the dog's strength up with Brand's beef-tea jelly; also give barley or rice water to drink.

Carbolic Acid:

Symptoms: The dog shows signs of great pain, and is violently sick; the lips, mouth, and tongue are white, swollen, and hard. There is great prostration and signs of collapse, the lips and ears being cold. The urine is

¹ According to the size of the dog. See p. 81.

of a dark brown colour, sometimes even black, or it may be altogether suppressed. When a fatal dose has been taken, the pupils are contracted, the dog soon becomes comatose, breathing difficult, and death follows. It is rather characteristic of carbolic acid poisoning that the patient, a short time before death, often seems to rally, making one (even persons of experience) think that the worst has passed, and that he is going to get better. But a sudden collapse often occurs, and death takes place unexpectedly. All cases do not run this acute course; the membrane of the tongue and mouth may be badly burnt and peel off, leaving a large raw surface, which ulcerates. The same may occur in the throat, and even in the stomach and bowels; and the dog gradually dies from exhaustion, or even blood poisoning, a week or ten days after the accident has happened.

Treatment: Give a large dose of Epsom salts at once, to be followed a few minutes afterwards by an emetic, apomorphia being the best—from one¹ to two teaspoonfuls of one grain to two ounces of water solution. Failing this, salt and water, or from five¹ to twenty grains of sulphate of zinc in water; also give the white of an egg or olive oil to relieve the burning irritation in the stomach. If symptoms of collapse occur, give stimulants, as brandy and ether. When the patient is very bad, these are more beneficial if injected under the skin; wrap the body in hot blankets and apply hot-water bottles. The ulcers that form in the mouth, the result of the caustic action of the acid, are often very troublesome, and the discharge from them is most offensive. When such is the case, keep the parts clean by sponging them frequently with a saturated solution of chlorate of potash.

Mercury:

Symptoms: There are signs of pain, violent vomiting, accompanied by profuse purging, the evacuations being

¹ According to the size of the dog. See p. 81.

mixed with blood; the lips, tongue, and mouth are swollen and white. The patient soon shows signs of collapse. The lips and ears become deadlly cold; the breathing is heavy and difficult; the secretion of urine is suppressed; coma and convulsions follow, then death occurs.

Treatment: Encourage the sickness by giving warm water; also administer large quantities of raw white of egg, flour and water and barley water. Give brandy or ether subcutaneously, if signs of collapse occur.

Cases of slow poisoning by mercury occur, caused by the injudicious use of some of the preparations of this agent for the skin, especially that called blue ointment. I have seen this salve applied as freely all over a dog as one would use lard, with a result I need not mention. Then there is the green iodide of mercury—a favourite remedy of the late Stonehenge. This is a valuable preparation for old wounds, for chronic eczema, and other skin diseases, if used sparingly, and not over a large surface. Then, again, repeated doses of calomel act very injuriously.

Symptoms: Diarrhœa, the evacuations being stained with blood; loss of appetite, sickness, great wasting; profuse flow of saliva from the mouth; gums at first red and inflamed, subsequently becoming ulcerated—the breath being horribly foul; a rash often appears on the skin, pustules form and break, giving forth a fetid discharge, and the hair falls off in patches. These cases usually terminate fatally, as the result of exhaustion, though occasionally a patient may be saved when the case is taken in time.

Treatment: At first, give a mild dose of castor oil, with from three ¹ to ten drops of laudanum; the oil, etc., may be repeated in a couple of days. Large and frequent doses of subnitrate of bismuth should also be given

¹ According to the size of the dog. See p. 81.

When the diarrhœa is very profuse, and there is much blood being passed, tannic acid is useful, given in the following formula:—

Recipe: The Pills:

Tannic Acid	$\frac{1}{2}$ to 4 drachms. ¹
Powdered Opium	2 to 12 grains.
Excipient, sufficient.	

Mix and divide into 12 pills.

Dose: One pill to be given every four or six hours, according to the severity of the diarrhœa.

The mouth and gums should be kept clean by being frequently sponged with a saturated solution of boracic acid.

Keep the strength up with strong beef tea, thickened with isinglass, and each time the dog is fed, give from half¹ to a teaspoonful of port wine. Let the patient have milk with white of an egg added, or barley water to drink.

A warm bath and a free application of some soap is beneficial. This is more particularly the case when the attack is due to absorption of the poison through the application of some ointment containing a mercurial compound.

If the skin is very moist, apply to the parts freely some finely powdered Fuller's earth.

When the dog has become convalescent, some iron or bark tonic will assist the patient to regain strength. Raw meat should also be given in small quantities five or six times a day.

Iodine and its Compounds, as Iodide of Soda or Potash, etc. :

Symptoms: A human being can take ten times as much iodide of potassium as a dog, without any bad result. The tincture of iodine is often used to reduce tumours

¹ According to the size of the dog. See p. 81.

or swellings. It seldom has any beneficial results, except in cases of goitre, when it is sometimes useful; and if the application is continued too long, or the preparation is applied over too large a surface, sufficient becomes absorbed to cause severe constitutional disturbance. If a large quantity of pure iodine or the tincture is given to a dog, the mouth and tongue will be found discoloured (dark brown); there is great pain in the throat and stomach; severe purging and vomiting—the vomited matter may be yellow or brown from the iodine, or blue, if there is any starchy matter in the stomach; and the breath has the peculiar unmistakably iodine odour. Dogs very seldom, indeed, are poisoned with iodine in this way, though it is not at all an uncommon occurrence for dogs to be slowly poisoned with iodide of potassium, or in some cases by pure iodine, through absorption into the system by the skin. The latter should never be given, and only the former in small doses, say from half ¹ to two grains, and even this quantity should not be continued too long. When it is, or large doses are given, the dog soon loses flesh; he has an almost unquenchable thirst, the result of gastric catarrh. Vomiting is frequent, especially after taking a large quantity of fluid; diarrhœa may be present; the tongue is of a dark brick-red colour; saliva flows freely from the mouth, and there is no desire for food.

Treatment: In cases of acute poisoning, if the patient does not vomit freely, an emetic should be given, as from five ¹ to twenty grains of sulphate of zinc in water or some ipecacuanha wine; give starch and water, also white of egg, and water in large quantities, and allow milk *ad libitum*.

If there is great prostration, inject ether or brandy under the skin. In cases of chronic or slow poisoning by iodide of potassium, the medicine must, of course, be

¹ According to the size of the dog. See p. 81.

instantly stopped; and diluted hydrochloric acid, from two¹ to six drops in a dessertspoonful¹ to two table-spoonfuls of water, given three times a day. If this does not stop the sickness and great thirst, the subnitrate of bismuth may be tried, in doses from five¹ to twenty grains, shaken dry on the tongue, every three or four hours. The dog must not have any water to drink, as it only increases the sickness; but plenty of ice placed in a perforated dish to lick, also iced barley or rice water. As there is often great weakness in these cases, nourishing food of an easily digested nature is required—Brand's beef essence, given in jelly form; milk peptonized, or thickened with Benger's food. As the case improves, lean raw meat in small quantities may be allowed.

Tartar Emetic:

Symptoms: The proper dose varies from a quarter¹ of a grain to one and a half grains. The symptoms, the result of a large dose, are continued sickness, with violent retching, and often diarrhœa; great thirst; coldness of lips, ears, and limbs, with severe depression and weak pulse, difficult breathing, collapse, and death. Sometimes just before dying the patient may be much convulsed.

In cases of poisoning by tartar emetic, there is generally an absence of blood in the vomited matter and bowel evacuations, which is not the case in poisoning by arsenic, as blood is passed freely both ways.

Treatment: Give a copious draught of warm water, with the idea of washing the stomach out; this, of course, is almost immediately brought up. A few minutes afterwards give from five¹ to thirty grains of gallic acid in water, which repeat every time the dog is sick, and let the animal have barley water or white of egg beaten up in water to drink. If there is great collapse, inject brandy or ether, from fifteen¹ minims to one drachm,

¹ According to the size of the dog. See p. 81.

under the skin with a hypodermic syringe; keep the patient warm, and as quiet as possible. When large doses of tartar emetic have been given, there is very little hope of recovery.

Turpentine is rather a favourite antihelminthic, though it is not so much given for this purpose now as it used to be; but it is still a good deal used by some keepers, and when not carefully and sparingly administered often proves fatal, especially in young patients.

Symptoms: Convulsions; coma; heavy stertorous breathing, with pupils contracted. A great assistance in the diagnosing of these cases is the smell of the turpentine in the breath; the bladder is very irritable; the urine has the odour of violets, and is passed frequently.

Treatment: Give an emetic as soon as possible. The best in these cases, as in many others, is the apomorphia, from two¹ to five drops of the 1 in 50 solution, injected under the skin, or double the quantity poured down the throat. Failing this, give from five¹ to twenty grains of sulphate of zinc, in water, or some powdered ipecacuanha. When the effect of the emetic has passed, a full dose of sulphate of soda, from one¹ drachm to one ounce, in water, should be given. The dog may be allowed to drink milk or white of egg, with water or rice water.

When there is much pain about the abdomen, a morphia suppository inserted into the bowel gives relief.

Oxide of Zinc, either in the form of lotion, ointment, or powder, is a household remedy, and an exceedingly good one, too, for many forms of non-contagious skin disease; but like almost everything else, when applied to the dog's skin, he makes it his business to remove it with the tongue as quickly as possible. A small quantity does no harm; but when the ointment or lotion is applied over a large surface, and the dog licks a large quantity

¹ According to the size of the dog. See p. 81.

off, serious disturbances of the system often follow. Acute cases of this kind are not so fatal, as a rule, as chronic ones—that is, as in those cases of long-standing skin trouble when the zinc has been in daily use for some time, and the animal has been systematically licking it. In these cases the ill effects of the zinc are first noticed by the dog vomiting after food.

Symptoms: There is great thirst and loss of condition; soon the dog refuses food altogether, the sickness increases, and becomes very frequent. If the mouth is examined, the inside of the lips and tongue will be noticed extremely pale—in fact, quite blanched—and the membrane of the eyes is in a similar condition. The dog is very cold and dejected. Diarrhœa often comes on, which adds to the weakness.

Treatment: In treating these cases, the application of the oxide of zinc in any form, of course, should be immediately discontinued. A purge should be given; for this, from two ¹ to fifteen grains of jalapin is as good as anything. This should be repeated in two or three days. Medicine to strengthen the system and stop the sickness should be given, as the following mixture:—

Recipe: The Mixture:

Dialysed Iron	2 to 8 minims. ¹
Solution of Arsenic (Fowler's)	$\frac{1}{2}$ to 2 minims.
Bicarbonate of Soda	3 to 10 grains.
Compound Tincture of Gentian	5 to 20 minims.

Water, from one ¹ to four teaspoonfuls. Repeat three or four times a day.

Strong beef tea in jelly form, either home-made or Brand's beef essence, should be given in small quantities frequently. Milk with soda water, if it does not induce vomiting, may be allowed.

When there is great prostration, stimulants, as brandy,

¹ According to the size of the dog. See p. 81.

are necessary, and should be given in small quantities frequently; and scraped lean raw meat is very beneficial in these cases, when the patient can be induced to take it.

Santonine is a most useful remedy for expelling round worms, especially in young puppies, but very often too much is given. As a result, violent convulsions are induced, which in many cases terminate fatally. Full-grown dogs will stand a good dose without any bad effects, but young puppies are particularly susceptible to its action.

Treatment: The patient should be made to vomit as quickly as possible, but this cannot be done whilst the convulsions continue. However, directly the dog is able to swallow, a dose of ipecacuanha should be administered, from two ¹ to ten grains (in a little water). This may be repeated in a few minutes, if it has not acted. If the convulsions are very severe, an injection of ether and laudanum should be given—from fifteen ¹ to sixty drops of the former, and from seven ¹ to twenty drops of the latter diluted freely with water. The injection should be repeated in half an hour, if the symptoms continue. A warm bath is sometimes useful.

Whilst on this subject, I may mention the proper doses of this medicine. For small puppies, toys, fox-terriers, etc., when five or six weeks old, a quarter of a grain in a teaspoonful of salad oil; collies, St. Bernards, and other big puppies, half a grain in a couple of teaspoonfuls of oil. The dose may be repeated twice a week when round worms are present.

Lead is another poison which is occasionally the cause of death. Many dogs are poisoned by this agent, but it is only an exceptional case that terminates fatally. I have known the acetate or sugar of lead to be given in mistake for Epsom salts, and I have also known puppies and even full-grown dogs to pick up and swallow pieces

¹ According to the size of the dog. See p. 81.

of white lead (carbonate of lead). I have also seen dogs very ill through licking their feet after walking on wet paint, and I have heard it mentioned that some dogs will deliberately go and lick a place that has been newly painted. However, I can scarcely believe this; but everyone knows a dog will try to clean his coat of whatever may get on it. Dogs will sometimes get a bad attack of vomiting by remaining in a house where painting is going on, just from the smell, and birds are easily killed.

Symptoms: Vomiting, colic, pain sometimes being acute; diarrhoea often at first, followed by constipation. The muscles of the stomach feel hard and rigid. There is great thirst, and in some bad cases paralysis of the hind legs and convulsions.

Treatment: Encourage the sickness by giving a dose of sulphate of zinc or ipecacuanha wine. Stimulate the action of the bowels with free doses of Epsom salts; give milk to drink, with white of egg added. If the pain is very severe, an enema of laudanum and ether will soothe. When there is great prostration, Brand's essence may be given—a teaspoonful or so every hour.

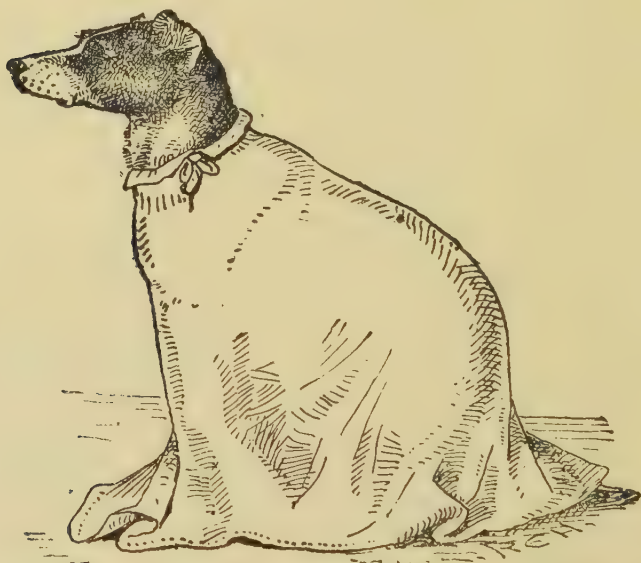
PREPUCE ORIFICE, Too Small (Phimosis) : Puppies are occasionally born with the opening in the prepuce too small, so that the penis is unable to be protruded.

Treatment: The difficulty is removed by a small operation—that is, by increasing the opening by making a small incision, and then sewing the skin to the mucus membrane. It is best not to do this operation until the puppy is three or four months old, and care must be taken during the healing that the wound is not licked. This is best done by making the puppy wear a wide collar, or keeping him in a sack for a few days, with the head only protruding as depicted in the illustrations. Older dogs can be operated on at any age.

PREPUCE ORIFICE, Too Large : Occasion-

ally puppies are born with the opening in the prepuce so large that the penis is always protruding.

Treatment: The opening may be partly closed by scarifying the edges of the skin, and then sewing it up. Care must be taken that the dog does not lick the part during the healing. Put in bag for a week.



A dog in a bag which is very useful when it is necessary to keep his tongue and teeth away from a wound or when some poisonous dressing has been applied ; being roomy it enables the dog to get about fairly well.

PROSTATE GLAND, Enlargement of :

Symptoms: Difficulty in passing water—straining; also difficulty in passing a motion—constipation. When very large, it may be felt by manipulation of back part of abdomen (the pubic region) just in front of the thighs, or by way of rectum.

Treatment: If dog unable to urinate properly, the water

must be drawn off with a small-sized catheter. The bowels must be kept in a semi-relaxed condition by mixing with the food, twice a day, from half to a dessert-spoonful¹ of salad oil. Also, give twice a day, from a quarter¹ to two grains of iodide of potassium in a little water. The extract of prostate gland may be tried—



A wide leather collar to prevent a dog from turning his head round.

dose, from half a grain to two grains.¹ An operation for enlarged prostate gland in the dog is not satisfactory, but castrating a dog suffering from this disease often has a good effect.

PROSTATITIS (Inflammation of Prostate Gland) :

Symptoms: Increased frequency of passing water, and

¹ According to the size of the dog. See p. 81.

straining after emptying bladder, when a few drops of blood are often passed. Big dogs are more subject to the disease than small ones. Pain is present, also temperature goes up; examination per rectum shows enlargement of the gland; constipation causes increase of pain at stool; pressure on part shows pain.

Treatment: Absolute rest, hot compresses to perineal region, copious enemata of hot water (100 degs. F.) very gently given. For irritation, high temperature, and discomfort, give:—

Recipe:

Tincture Aconite . . .	20 drops.
Tincture Belladonna . . .	20 drops.
Bromide Potassium . . .	1 drachm.
Citrate Potassium . . .	1 drachm.
Sweet Spirits of Nitre . . .	4 drachms.
Water to	6 ounces.

A teaspoonful to a tablespoonful every three or four hours.

If pain is severe, one grain of sulphate of morphine may be added to the above mixture. Or:—

Recipe:

Extract Belladonna . . .	2 grains.
Watery Extract Opium . . .	4 grains.
Coca Butter for	12 suppositories.

One per rectum, two or three times a day according to severity of pain; half for toy dogs.

Do not take the dog for long walks; feed principally on milk, with biscuits, bread, toast, rice, etc. Fish may also be given, but avoid meat. Give aperient medicine; castor oil is the best.

PRURITUS ANI (Inflammation of Skin about Anus):

Symptoms: The skin around anus is red and inflamed, and very irritable; the dog draws himself along the

ground on the back parts, and is also frequently trying to lick himself.

This condition is often associated with a swollen and congested state of the anal glands.

Treatment: Try the ointment recommended for growths round anus, or bathe parts with following lotion:—

Recipe:

Carbolic Acid	.	.	.	1 drachm.
Glycerine	.	.	.	2 drachms.
Water to	.	.	.	8 ounces.
Mix.				

If the anal glands are distended, empty by squeezing, and wash with Cook's three per cent. mercurial soap. (See article on ANAL GLANDS.)

As medicine, give from two¹ to fifteen grains of milk of sulphur twice a day. No red meat. Fish, tripe, sheep's-head.

PSORIASIS :

Symptoms: A dry and scaly condition of the skin, with small red spots here and there, particularly when the elbows, knees, and hocks are affected, which are the parts more often attacked.

Treatment: When the disease is spread more or less all over the dog, a dressing made of coco-nut oil six parts, and glycerine one part, well mixed together and applied all over the dog, and repeated once in four days, is beneficial. The dressing should be washed off after a week, using sulphur soap, and then the dog should have two or three times a week, for a time, a sulphur bath made by dissolving one ounce of sulphurated potash in a pail of tepid water.

When the disease affects only the joints, apply the following dressing twice a day:—

¹ According to the size of the dog. See p. 81.

Recipe:

Methylated Spirits	.	.	} Of each one ounce.
Green Soft Soap	.	.	
Oil of Cade	.	.	
Mix.			

Give the dog worm medicine, also a course of arsenic, from one ¹ to six drops of liquor arsenicalis B.P. in water twice a day after food. The dose may be doubled a week later. This medicine should be continued for about a fortnight, but should it cause vomiting, diarrhœa, or loss of appetite, it is at once to be discontinued.

This may prove more useful in some cases:—

Tincture Ferri. Perchlor.	.	.	2 to 6 drops.
Liquor Arsenicalis	.	.	2 to 6 drops.
Water to	.	.	1 tablespoonful.

Once or twice a day after food, given for a week, then miss a week.

PUERPERAL FEVER:

Symptoms: It may occur three or four days after pupping—commences with an attack of shivering—the temperature rises probably to 105, the pulse is rapid and weak. There is great thirst and vomiting, and usually constipation. The discharge from vagina may cease or become putrid, and the secretion of milk stops. The abdomen is distended and painful. Prostration, and possibly delirium.

Treatment: Give a large dose of salicylate of quinine, from one ¹ to five grains made into a suppository, twice a day. Also give for heart and rapid pulse:—

Tincture Digitalis	1 to 5 drops	} in Water.
Strychnine	$\frac{1}{200}$ th to $\frac{1}{100}$ th grain	

Twice a day so long as heart requires it.

¹ According to the size of the dog. See p. 81.

Nuclein is indicated in many cases, and proves very useful when absolutely fresh; half to two teaspoonfuls in water.

Apply hot linseed-meal poultices to abdomen. Well wash the womb out with a solution of perchloride of mercury, 1 in 2000—that is, one grain to about every four ounces of warm water. Of this solution use about two ounces for a small bitch, and half a pint for a large one. About two minutes after injecting the solution of mercury, wash the womb well out with plain warm water, using from four¹ ounces to a pint. The syringing may be repeated in twelve hours. When the mercury is not at hand, a saturated solution of boracic acid may be used, or permanganate of potash, one grain to each ounce of water.

To wash the womb out properly, a sterile Higginson enema syringe should be used, and the long insertion tube well vaselined passed up the passage as far as it will go.

Diet: Should be light, as milk with Vichy water to drink, also Brand's beef essence, or Valentine's meat juice, given with Vichy water.

If the vomiting is very troublesome, give the mixture recommended for gastritis, and keep up the bitch's strength with nutritive enemas and peptonized meat suppositories. Also resort to subcutaneous injections of normal salt solution from two ounces on each side to half a pint.

PULSE : A dog's pulse varies in the number of beats per minute, according to his size. The number is less in a big dog than a small one. A St. Bernard's pulse, for instance, beats about 70 times per minute, and a small dog's, say, like a toy terrier, 100 times per minute, and a dog's pulse is often intermittent in its beat.

In disease, the pulse, in most cases, is increased in

¹ According to the size of the dog. See p. 81.

frequency. It might be for big dogs 100 to 120, and for small dogs from 120 to 150 or 160 times a minute.

In some instances, as in some cases of heart disease, or in pneumonia, when the heart is affected, the pulse is very slow indeed. A big dog may go down to 50, and a small dog to 70. A very slow pulse is more serious than a fast one. In such cases, some such mixture as the following should be given:—

Recipe:

Tincture Digitalis	.	.	2 drachms.
Tincture Nux Vomica	.	.	1 drachm.
Simple Syrup	.	.	1 ounce.
Water to	.	.	6 ounces.

Doses: From one teaspoonful to a tablespoonful ¹ every four or six hours.

The pulse not only varies in number of beats per minute during illness, but also in character—for instance, after great exertion the pulse is full and fast, and in cases of internal inflammation it is small and wiry as well as fast.

In some diseases of the nervous system the pulse is very slow. During a prolonged illness, or after a severe illness, the pulse can scarcely be felt; it is then said to be weak, and stimulants and tonics are indicated.

The pulse is always quicker in young dogs and old ones than it is in those in the prime of life. The best place for taking the heart-beats or pulse is at the femoral artery, just as it crosses the inside of the thigh-bone.

PUPPING :

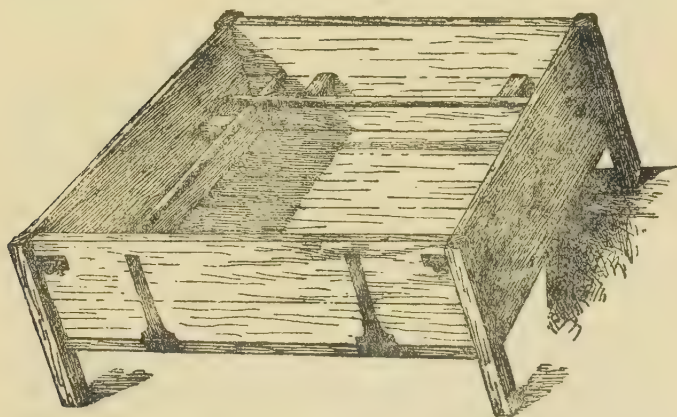
Examination for Pregnancy:

This is not of much use until about the fourth or fifth week from being served; there are some bitches in which it is extremely difficult to be sure of pregnancy right up to the time of parturition; that is if the horns

¹ According to the size of the dog. See p. 81.

of the uterus do not fall from under the loins to the floor of the abdomen, as is usual; this, of course, is in cases of few and small puppies. The fœtuses of canines are carried in the horns of the uterus.

To discover whether a bitch is pregnant, let her be placed upon a table, and her fears or excitability banished by caresses; then lay her upon her side, and with the fingers gently manipulate the abdomen. If pregnancy



Safety Whelping Box. (Designed by the Author in 1884.)

The inside rails prevent a bitch overlaying puppies that may get behind her. The rail inside the front of box should not be attached to sides, on account of opening, but have an extra support in the centre of flap.

The opening of flap allows of proper cleaning and gives opportunity for puppies to run in and out when they are old enough.

is sufficiently advanced, on directing one's attention first to the situation the horns of the uterus occupy, near to the rim of the pelvis, and inferior to the rectum, round smooth bodies, like little eggs, will be detected there. These may not be perceptible if the bladder be loaded; but if the catheter be employed to draw off the urine, they will surely be felt. If the rectum be full of fæces, it

serves as an admirable guide to the position of the uterus, though one who is acquainted with anatomy needs no such assistance. Some globular substance being detected, the fingers are advanced; and if more than one pup be conceived, another similar to it will speedily impinge upon the touch; then another, and so on, until the whole of the promised family have been thus announced. The last is the most difficult to discover; for should there be more than two or three, it may, and will generally, occupy the extremity of a horn, and in that situation may escape observation. There are to the womb of this animal a pair of horns, which are long, and extend to the region of the kidneys. Both cannot be traced at the same time, and there is a chance of the two being confounded; therefore it is not well to be positive as to the precise number of young the bitch will bring forth. And one never presumes to speak confidently upon this point; for though, in the majority of cases, my opinion may have been corroborated, nevertheless I have often known a pup more than I supposed the uterus contained to have been delivered. From the end of the fourth week, the litter, as it were, go away, or are lost; but when the sixth week arrives, the contents of the abdomen may be plainly detected; and if the bitch be taken upon the lap, and her belly supported with the hand, they at this period will be felt to move, and the motion even of their limbs may be clearly recognized.

Milk appears in the teats about the middle of the eighth week, and sometimes sooner, or occasionally later.

Attention during Pregnancy:

For a bitch to be in proper condition at the time of parturition, she requires some attention during pregnancy. One or two hours' walking exercise daily is essential during the early part of the time; but when the bitch becomes very heavy, as is often the case the last fortnight,

then half an hour's slow walking is enough, unless the bitch is inclined to take more. During the first five weeks it is not necessary to make any alteration in the diet. If the bitch is in the habit of being fed only once a day, so let it continue; but after the time mentioned, food should be given twice a day, and should be of a good nourishing kind, as soaked biscuits with a little undercooked meat—three parts of the former to one of the latter. When she is delicate, and has a poor appetite, extra meat may be allowed; and in some cases, especially towards the last, if she is disinclined to take her ordinary food, meat, raw or cooked, may be given alone two or three times a day.

Spratt's small special cod-liver oil biscuits, which contain ten per cent. of the oil, make first-class food for bitches of *poor condition*. They may be given dry, also broken up small, soaked in soup, and mixed with meat in the proportion previously stated. The principal thing is to feed regularly, and not to give too much at a time.

Bitches when in pup are best without a lot of medicine; but I consider it a good plan, about *three weeks after service*, to give a vermifuge, not with the idea of preventing the puppies becoming infested with worms, as that is impossible before birth; but no bitch can be in good health, which is so essential at this time, if the bowels are full of worms. I do not advise a strong drastic dose, but one of medium strength, and it should be repeated the following week. It is very important to examine the bitch's skin from time to time, so as to check any cutaneous disorder early; for if the bitch has any contagious skin disease when the puppies are born, they are sure to contract it, and nothing thwarts their growth more than an irritable skin, for it prevents rest, when plenty of sleep is so essential for a puppy's welfare; so if there are symptoms of mange, have her at once

dressed all over with some mild preparation like sulphur ointment made with vaseline, which should be repeated two or three times in the course of a week, and after a few days washed off. In case of eczema, a bath in Jeyes' fluid diluted eighty times with water, or after the seventh week sponging all over with a solution of the same, will in most cases be all that is necessary. In some cases of eczema, at these times a little cooling medicine is useful, as an occasional dose of syrup of buckthorn and castor oil, or a small dose every day for a week of some alterative powders, as the following:—

Cream of Tartar . . .	}	Equal Parts.
Powdered Magnesia . . .		
Bicarbonate of Potash . . .		
Milk of Sulphur . . .		

Dose: From sufficient to cover a sixpence to a dessert-spoonful.¹

If a bitch has been in the habit of being regularly washed, this may be continued as usual, when the heat has passed, until about the seventh week, when it is not advisable to put the bitch right into warm water in case of a miscarriage.

While on the subject of abortion, I may mention that a bitch ought never to be sent on a journey by train during the last two weeks, for a shaking of this kind is more likely to cause premature confinement than anything else I know.

It is very important that the bitch should be quite clean at the time of parturition, and it is a good plan to wash the stomach and breasts, also the vulva and surrounding parts under the tail, with a strong warm solution of Jeyes' fluid, about 1 in 40. Some treatment of this kind is more likely to prevent young puppies from having worms soon after birth than anything else. It is a common custom, and I think a very good one, to give

¹ According to the size of the dog. See p. 81.

a bitch in pup a dose of castor oil about three days before she is due. In many cases, especially when the bitch is a bit gross, it is advisable to give a dose of the oil a week before her time is up, and again three or four days later.

While the bitch is carrying her young it is good policy to get her used to the bed in which she is to have her family, choosing a quiet place. Soft broken straw is the best bedding because it can be easily changed as required.

Symptoms of Whelping:

Bitches, as a rule, have their puppies on the sixty-second or sixty-third day, the day of service being included; but some will pup on the sixtieth day, or even a day or so earlier, and the puppies may be fairly strong in the small breeds, but when born before the fifty-seventh day they seldom live. On the other hand, many, especially those of the larger breeds, will go two or three days over the specified time without inconvenience; and I have known one to go as long as seventy-three days, and then to have a litter of strong, healthy puppies, but this does not often occur when there is a large litter.

One who is accustomed to dogs can tell within a few hours when a bitch is going to pup. There is disinclination for food, the vulva is swollen, and there is a discharge of thick mucus from the vagina, and, as a rule, she seeks a quiet spot to be alone, and starts to scratch and make her bed.

Whelping:

At this time, after making the bitch comfortable with a nice clean straw bed—there is nothing better than soft broken straw, which should not be supplied too plentifully—she should be left by herself for a time. As the labour pains come on, she becomes restless, and pants; is frequently looking around, and licking herself. When this occurs, labour in earnest may be considered to have commenced; and if all is going well, one or more puppies should be born in the course of an hour or so.

If after two hours there are no signs of a puppy appearing, it is well to examine the bitch; but if a bladder (fœtal membrane) is protruding from the vagina, there is no hurry to interfere, as this is a sign, as a rule, that matters are taking a normal course, and that more time is required; and the bitch, after being offered some warm milk, may be left again for another hour or two. Bitches at their first pupping should always be given more time than one which has had two or three litters, and this is more especially the case when she is three or four years old, or even older. I have known bitches when over nine years of age to have a litter of puppies for the first time, and, as may be expected, it often goes very hard with them, though with care they may live through it. Once the membrane protrudes, which the bitch generally ruptures by biting, the first puppy—if everything is all right—soon makes its appearance; and, as a rule, by the time the cord is divided, and she has attended to the young arrival's toilet, another youngster is nearly born, and in the course of an hour the bitch may have given birth to three or four puppies; then, perhaps, if there are any more, there is an interval of two or three hours, which gives the bitch time to recover her strength, and take some refreshment in the way of thin oatmeal gruel or plain milk warm, and in most cases this is quite sufficient; but if there are signs of exhaustion, some Brand's essence, or the white of an egg beaten up with milk, and a small quantity of brandy, may be given. After this, in cases of the smaller breeds, when the average number is four or five, the last of the puppies soon makes its appearance; this also refers to terriers, though they may have five or six, or even more puppies, as they are such strong dogs compared to toy spaniels, pugs, etc.

Very often a bitch will have all her puppies but one with the greatest ease (for it is seldom a bitch cries out whilst pupping after the first litter), when the pains

seem to cease altogether, and do not return for many hours afterwards, perhaps not until the next day. In such cases, a dose of some medicine to excite the action of the uterus is necessary, but this will be dealt with later on.

Bitches of the larger breeds which have big litters of twelve, fourteen, sixteen, and more puppies, invariably take all day, even in normal cases; but after twelve some assistance and great care are required, for by this time the mother is getting exhausted. Good warm gruel should be offered, a little after every puppy, and about every three hours the white of an egg beaten up with a teacupful of milk and a dessertspoonful of brandy should be given.

After Whelping:

Bitches that have had their puppies easily do not require much food during the next twenty-four hours, the foetal envelopes, which are always eaten, affording a certain amount of nourishment; therefore, if some thin oatmeal gruel or Benger's food made with milk be offered, it is sufficient. Plain milk may also be given to drink. The same diet does for the following two days, with the addition of some soup or sheep's-head broth with bread or crushed dog biscuits, a small quantity twice a day. For the first two or three days there is normally a raised temperature, hence the light liquid diet. After the third day a more liberal diet may be allowed; boiled fish, as fresh haddock, with bread, also the meat from a sheep's-head, and bread or broken biscuit soaked soft in the soup. By degrees the quantity and quality of the food may be increased, for after a fortnight, when there is a large litter, a good deal of nourishment is required, if the bitch is to be kept strong and the puppies fat. When milk is deficient or limited in quantity, increase raw meat, which is the best milk producer.

Very often, two or three days after parturition, the

bitch has diarrhœa. As a rule, it is not severe, and passes off in the course of twenty-four hours. Should it continue after this time, a dose of castor oil and laudanum may be given. In small bitches, as toys, a teaspoonful of the oil with three drops of laudanum; for terriers, a dessertspoonful of the former and five drops of the latter; collies, etc., a tablespoonful, and ten drops of tincture of opium; and large bitches, two tablespoonfuls and ten drops. The dose should be repeated in six hours. If the diarrhœa continues after the oil has worked off, from five¹ to twenty grains of bismuth may be given three or four times a day, shaken dry on the tongue. During the diarrhœa, the milk should be thickened with arrowroot, and the soup be given with rice instead of bread or biscuit.

Difficulties which may occur:

Some bitches, when due to pup, and though in good health and fairly strong, have not sufficient labour pains to bring forth their young; the water-bag may break and there is the usual green-coloured discharge, but the throes are so slight as to be of little use. Of course, once the foetal membrane is broken, and the fluid escapes, the puppy soon dies if not born; therefore, it is necessary to use means to stimulate the contraction of the womb—in other words, to induce labour pains—and for this there is nothing better than ergotine, which is a strong extract of ergot of rye. Until recently the latter was used, the seed being coarsely powdered, and from ten¹ to sixty grains administered in warm milk or coffee, the dose being repeated every two or three hours until several had been given. There are other preparations of ergot, as the ammoniated liquid extract, and ammoniated tincture. The former is the next best preparation to *ergotine*, and should be used when *ergotine* cannot be obtained. The dose varies from ten minims to one

¹ According to the size of the dog. See p. 81.

drachm,¹ which may be given with water, or in a little milk, and repeated every two hours until the pains have been induced, or six doses given; but these preparations are *not so good as ergotine*, for not only does the latter act with more certainty, but there is another advantage in its administration, and that is, it may be *injected under the skin*, and consequently the stomach is not irritated and perhaps the bitch made sick, which often happens when these medicines are given by the mouth. The *dose of ergotine* is from one¹ to three grains, given in from ten¹ to forty minims of brandy. There is no advantage, as is often recommended, in injecting it deeply into the muscles in the region of the pelvis, as it is quite sufficient to introduce it just under the skin. I generally do so behind one of the shoulders on the side of the chest, where the skin is loose. The action of the drug, when given in this way, may generally be observed within a quarter of an hour, and the dose, if necessary, may be repeated in a couple of hours.

Pituitrin:

A still more recent remedy, even safer than ergotine, is "*pituitrin*," prepared in ampules (0.5 c.c.) for small dogs to terrier size, injected subcutaneously for large dogs (1 c.c.). It acts quickly and can be repeated in two hours; it also prevents shock and controls bleeding.

It is not an uncommon occurrence, as before observed, in cases of parturition, for bitches that have large litters to give birth to all the puppies quickly, and with a certain amount of ease, until the last, or in some instances last two puppies. Then the pain seems to cease, and the bitch appears fairly comfortable for some hours, and it is often thought by the attendant she has finished, and there is no further cause for anxiety; but in about twelve hours, or perhaps the next day, the bitch becomes restless again, refuses her food, is inclined to neglect her pups,

¹ According to the size of the dog. See p. 81.

and is constantly wanting to go out, and after passing water, sits and strains for a few moments. When these symptoms are noticed, the bitch should be immediately examined, and if it is found there are more puppies, and that the foremost one is not unnaturally situated, a dose of *pituitrin* should be at once given, and some nourishment also administered, as milk and brandy, or Brand's beef essence, or even a little scraped lean raw meat.

Breeders should make it a regular practice to examine a bitch when it is thought she has finished pupping, by gently manipulating the abdomen, also by passing carefully a washed and disinfected and well-oiled finger into the vagina, for it is often impossible to tell for certain, without examination, if there is only one left, more especially in cases when the mother has had a large litter. Many a valuable bitch is lost through this not being regularly done. Because the pups, when left behind, if not already dead, die, and quickly decompose and set up blood-poisoning, which invariably terminates fatally within twenty-four hours.

Considering the number of young a bitch has, and the variety often found in the size of the puppies, I think it is wonderful they get through their trouble as well as they do, more especially when we take into consideration the artificial life dogs generally live. There are some breeds which are always a source of anxiety to their owners, especially the toys, as spaniels and griffons, for they frequently have a habit of throwing back to the size of their ancestors, which were no doubt much larger dogs than the modern specimens. The same remarks refer to Yorkshire terriers as well as to the other small breeds, but the fault very often lies with the owner in trying to breed from very small bitches. Bull-bitches, again, often have difficulty in bringing their puppies into the world, and this is in a great measure due to the modern dogs having such large heads and small pelvises.

In addition to the difficulty mentioned, this breed is no doubt of a naturally weak constitution, due to so much inbreeding spread over so many years, and their organs of reproduction are very liable to disease. Of course there are many of what one may call accidental cases, as when a fox-terrier or dachshund has puppies by a dog the size of a collie. I have known many cases of this kind, and, as may be expected, the bitch has trouble in giving birth to such youngsters, though they may by good luck be born without any difficulty at all. Then there are other cases of difficult parturition, due to stricture of the vaginal passage (these strictures can usually be dilated), or the result of injury to the pelvic bones, as when a bitch has been run over across the hips, or as the result of congenital deformity of these parts. There is nothing to be done in these cases but to have the Cæsarean operation performed, when some of the puppies may be saved and the bitch too, if the operation is done in good time.

There is another form of stricture of the vagina, which is generally found just inside the vulva. It is due to a strong band of mucous membrane, which refuses to dilate as the surrounding parts do at this time, and in some cases it is so strong that one is not able to dilate it in the ordinary way; therefore, the only thing to do is to cut through it with a blunt-pointed knife (bistoury), which I generally do at the side, and always with good result.

Difficulties arise at parturition in consequence of the unnatural position of the fœtus; a puppy should come with the head first, the nose extended, and the fore legs placed one on either side of the neck. Another easy position for birth is when the hind legs come first, but in these cases, unless the puppy is delivered quickly, it dies from asphyxia.

When a puppy presents itself outside the entrance of

the passage and even by straining the bitch does not seem able to give birth to it, a dry duster should be used to prevent slipping, a firm hold taken of the head or hind limbs, and with steady, firm (not jerky) traction the puppy can be removed.

For some unaccountable reason a fœtus frequently assumes a wrong position, which renders its birth extremely difficult. In such cases it is useless to give ecbolics or medicines to stimulate the labour pains, but means must be taken to place the puppy, if possible, in a proper position, and then a dose of pituitrin is useful. Perhaps the most common malposition is when both fore legs are thrown in a backward direction, causing the shoulder to project, thus inducing a mechanical impediment to birth. These are not very troublesome cases, as a rule, for the legs, by means of a blunt-pointed round hook, may be drawn forward; if there is nothing better at hand, a long button-hook will answer the purpose; after sterilization of both hook and hand (Cook's three per cent. mercurial soap), this is perfectly safe.

This accomplished, the puppy should come away easily; but if the bitch is weak from long straining, it is advisable to remove the puppy entirely, especially if it is thought there are more to come. I may mention that when one has to use instruments of any kind to assist the patient, the puppy is generally in some way injured, so that if it does not die at the time, it usually does very soon after; but after all, this is of little consequence compared with the life of the mother.

In some instances the puppy presents itself at the mouth of the womb with the top of the head foremost, the nose being pressed down against the chest; if it is at all large, birth is very difficult in this position. In such cases, one should try and elevate the nose with the point of the finger; when the bitch is not a large one this is often possible, but when she is, it is necessary to

employ a crotchet or crook—as mentioned before, a button-hook with a long handle does very well—and, if possible, it should be fixed in the mouth and the nose drawn up; this is rendered more easy if one can, by means of the finger of the other hand, press the neck backwards towards the body of the bitch. It is, however, often impossible to raise the head, and the only thing to be done is to seize the neck firmly with a pair of forceps, and by traction at each time of straining, extract the puppy. Care must be taken not to injure the bitch, or inflammation, which may prove fatal, will occur. Any tear in the lining of the passage or the uterus will allow of the entrance of dirt organisms if present, hence the great importance of all instruments and hands being sterilized.

In other cases the head may be bent in a backward direction, the front of the neck presenting. These cases, though somewhat more difficult, require similar treatment to the previous kind. When all other means have failed, the neck may be divided and the head removed by forceps; the body will then generally come away by itself.

The foetus assumes numerous other positions besides those mentioned—as, for instance, lying transversely, the puppy's side presenting to the mouth of the womb, and when the labour pains are strong, no amount of manipulation will put the body in a normal position. Rather than let the bitch waste her strength uselessly, the puppy should be divided or broken up by means of a sharp-cutting hook, and removed by means of forceps.

When a fore and a hind leg are presented into the vagina, the former should be pushed back into the womb, and the hind leg seized with forceps and made fast with a piece of tape. (It is easy to distinguish one leg from the other by feeling for the hock-joint in the hind limb.) When this is done, the other back leg should now be

felt for, and when its position is ascertained, it should, if possible, by means of a small pair of forceps (ordinary dressing forceps answer very well for this purpose) or crotchet, be drawn into the vagina, or made fast with tape like its fellow, and then by gentle traction on both limbs the puppy is delivered. A little vaseline applied to walls of passage will help matters.

It occasionally happens, in cases of head presentation, that the hind legs are bent forward on the body, which renders the delivery difficult, and unless the passage is large, and the pains are very strong, the bitch cannot bring forth the pup without assistance. This is best rendered by grasping the puppy across the hips with a small pair of thin-bladed parturition forceps, and gently pulling the puppy during each throe.

It frequently occurs that though a puppy may lie in a normal position, the mother is unable to give birth to it in consequence of its being too large. The nose may be just inside the vagina, and there become fixed in spite of the bitch's straining for hours. I have seen hundreds of such cases. It is a mistake to leave the bitch in this condition too long, thinking matters will come all right, as it is wasting time and the mother's strength; and if there are other puppies to come, she probably will not have strength either to expel them herself or help anyone who may try to assist her. In this instance, the head is so firmly fixed in the mouth of the womb that it is impossible to take hold of it with forceps, however small or thin the blades may be, but the hook of the crotchet may generally be passed into the mouth of the puppy, and by fixing it well into the palate a good hold is obtained, and the puppy drawn through the passage by main force. If care be taken, it is astonishing what amount of force may be used in promoting delivery without at all injuring the bitch, but it is best not to pull on the puppy except during the labour pains, if there are any.

It is the custom of some to give the bitch, during labour, a hot bath if the parts are not considered sufficiently relaxed, or if the pains are dull; at the proper time the tissues always become sufficiently dilated, providing the parts are in a normal state—that is, apart from a stricture in the vagina, or something of the kind—and if there is any abnormal condition, a warm or hot bath, in my opinion, often does more harm than good by checking the pains.

Sometimes when the ergot fails to induce or stimulate the throes, I have applied an ice-bag with advantage to the abdomen; but what I find the best of all, when one or two subcutaneous injections of ergotine have not worked satisfactorily, is to put the bitch in some vehicle and give her a drive, and if nothing else will induce the labour pains this shaking up will do so in most cases. It has proved successful in very many cases of bitches as well as human beings.

The worst of all are those cases when the bitch is due to pup, the parts are relaxed, and there are no labour pains to expel the fœta. Examined per vagina, no puppy can be felt, and no amount of excitement of the parts by passing a cold instrument into the passage, or injections of ergot, causes contraction of the womb. If the patient seems all right, it is best to wait some hours, during which time everything should be done to try and excite contraction of the parts. If the means taken do not succeed, then there is nothing to be done except the Cæsarean operation, as it is not safe to attempt delivery with forceps or the crotchet when the puppies cannot be felt with the finger.

The best forceps, in my opinion, in cases of parturition, are those made by Messrs. Krohne & Sesemann, of Duke Street, Manchester Square, London. They are made after the pattern of Wells ovariectomy forceps, of very fine hard steel; the blades are extremely thin and small, and deeply serrated, so that when a puppy is taken hold

of they do not easily slip off. My crotchet was also made by the same firm, and, if care is used when working with it, it is a most valuable little instrument. When from causes due to mechanical impediment either on the part of the bitch or puppies, or from want of proper labour pains, it is impossible to obtain the birth of the puppies through the proper channel, the abdomen should be opened. If the operation is done in good time (that is, before the bitch has become weak), and proper anti-septic precautions taken, there is a chance of saving the mother's life, though the operation is a dangerous one. At any rate, some of the puppies can be almost certainly brought forth alive; whilst if the operation is not undertaken in these circumstances, one knows that not only the bitch but all the puppies are sure to die.

Prolapsus, or inversion of the womb or uterus into the vagina, sometimes, but very rarely, occurs during parturition, due to very severe straining, or as the result of too much force being used to remove a puppy with forceps, or by other artificial means. Care must be taken in these cases not to mistake protrusion of the uterus for prolapsus of the vagina or a polypus. The latter may be recognized as a solid, pear-shaped body with a narrow neck, whilst a prolapsed vagina is generally a large, solid, oval body, which almost fills the vaginal canal, if it does not protrude externally. It has a broad base, and rises at the back part of the passage, just in front of the meatus or opening to the bladder. The ruptured horn of the uterus is soft, reducible, and rough, and tubular in shape, besides showing dark-coloured patches where the placentas have been attached.

After the womb has been cleansed by being sponged with a weak, tepid solution of permanganate of potash, it should, if possible, be returned by gentle pressure on the fundus of the uterus with a piece of whalebone, with

the point covered with a sponge. The returning is assisted if the hind legs are raised—in fact, by the bitch being held upside down. Care must be taken not to use undue force, or the uterus may be ruptured. After the return, it is a good plan to inject a quantity of cold water into the vagina to act as an astringent.

When the protruding uterus shows signs of having been injured, or is much congested, or decomposition has set in, amputation is advisable. This is best done by drawing the part gently out and applying a strong silk ligature as high up as possible, and cutting off the free portion.

Attention after Whelping:

The bitch, when she has finished pupping, requires little attention beyond a change of bed and a fair supply of nutritive food. She does best when least noticed; but it is well to see that she takes sufficient exercise. On the following day she should be taken out two or three times for a few minutes to relieve herself, and every day after that she ought to be about pretty much as before. Some bitches, however, are such devoted mothers as to sacrifice health, and occasionally life itself, to enjoy the pleasure of being with their young ones. This excess of affection must be controlled, for, if not checked, it will seriously injure both parent and offspring. All animals, however, are not thus distinguished. Some bitches cannot be induced to suckle the pups they have given birth to; and others, though less frequently, will eat their progeny. The disposition to desert or destroy their young seems to prevail among the parentage of this world. In the female of the dog the maternal instinct is most powerful, but under certain conditions of the animal's body the natural impulse seems to be perverted, and she takes the life she would else have perished to preserve. A frequent cause of eating the young is great excitability, so that after eating the after-birth (which is a normality) they continue eating—especially when

greatly perturbed by interference—and the puppy gets eaten with the after-birth.

Some persons entertain a notion that the bitch which has once devoured her litter will ever after retain the disposition. This is a false idea. On the next occasion, if properly treated—that is, if not persecuted, chastised, alarmed, and annoyed, but properly dieted—she may prove, and most likely will prove, an excellent mother, the very excitability which, when over-stimulated, induced her unnatural impulse, making her, when tranquil, the more alive to the instincts of her nature.

For the first week the bitch is, as a rule, very attentive to her family, and as it gives her pain when one is taken up, it is better not to handle the pups more than is absolutely necessary. She should be well fed; *not crammed*, but nourished; and she will require more food than formerly, for there are many mouths to feed through hers. The quantity of support she needs may be conjectured from the rapid growth of the pups.

A small bitch of my own had a litter of four. The mother weighed seven pounds six ounces, and between the second and fourth week the young ones daily added one ounce and a half each to their bulk. It would require some amount of milk to produce such a quantity of tissue; and we have also to remember that, during the rapid growth, the process of consolidation is simultaneously going forward. Good nourishing food, sufficient in bulk, is absolutely imperative; for if the pups be stinted, the dogs will assuredly be weak.

A strong bitch may be able to bring up five or six young ones, and I have known some instances where a bitch has reared successfully as many as ten; but the animals of the smaller or choice breeds are seldom possessed of such capabilities. The very diminutive will not generally rear two pups without suffering; and four are a very heavy drag upon the majority of the

animals kept as pets, even though they be in no way remarkable on account of size.

If anything happens to the bitch, and she is unable to rear her puppies, either a foster-parent must be found (and a cat will rear a small pup very tenderly), or the litter must in part be brought up by hand. (I once employed a doe rabbit for this purpose with a minute, motherless puppy, and was quite successful.—F. W. C.)

This last is more troublesome than difficult to do. The pups want to be fed early and late, consequently they must be taken into the bedroom; and when the feeding-time arrives, the soundest sleeper will be reminded of his duty. A special bottle and teats, patented by Mrs. Raymond Mallock, is now on the market; in the same box there is a teat for "cleft palate," which prevents the return of liquid food through the nose. I do not know of any feeding-bottle so good as this. This, therefore, being attended to, the little creatures very soon learn their lesson, and all that subsequently needs to be done is to hold them to the bottle and the bottle to them. Each pup occupies from ten to fifteen minutes at a meal; and they may be allowed to decide the quantity that will do them good, unless one should obviously be morbidly gluttonous, when the indulgence of its appetite should be restrained.

The best food for such young puppies is to give artificially prepared bitches' milk, made by adding cream, etc., to cows' milk. (*See* article on MILK.)

There is only one circumstance that need be pointed out when pups are brought up by hand. The teats and feeding-bottle after sterilizing should be kept in water rendered slightly alkaline with carbonate of soda.

If the puppies are strong, one may commence to wean them when between five and six weeks old; but when they are weakly or delicate, it is best to wait another week before commencing to take them away from their

mother; and in any circumstances it must be done gradually for the mother's sake. For the first three days separate the bitch from the puppies all day except for half an hour, middle day; then keep her away entirely during the day, only allowing her to be with them at night; and then, after a few days later, only allow her to visit her puppies for a short time night and morning. This must continue so long as the bitch has any desire to go to the little ones, or so long as she has any milk.

As to feeding the puppies, *see* the article on FEEDING.

PURGATIVE MEDICINE : A dose of purgative medicine, judiciously administered, is a good remedy for many minor complaints, and often makes what looks like being a very sick dog into a healthy one.

Castor oil is a good household remedy, but causes constipation afterwards if continued for long; but in cases of diarrhœa, when it is necessary to clear the bowel of any irritating matter, there is nothing better than castor oil. The dose varies from half a teaspoonful to two tablespoonfuls.¹ When the dog is showing signs of abdominal pain, from three ¹ to fifteen drops of laudanum may be added to the dose.

The following is a mild aperient mixture, and does not bind afterwards:—

Recipe:

Castor Oil	.	.	.	.	.	} Equal Parts.
Syrup of Buckthorn	.	.	.	.	.	
Salad Oil	.	.	.	.	.	
Well mixed.						

Doses: From half a teaspoonful ¹ to two tablespoonfuls, fasting, in the morning.

For little dogs suffering from constipation, salad oil mixed daily with the food answers well. Give from a half ¹ to a teaspoonful once or twice a day. Raw liver,

¹ According to the size of the dog. See p. 81.

or underdone, is relaxing; boiled brains are almost purgative with many small dogs.

Some dogs refuse to take their food with oil in it. In these cases, fluid magnesia is a nice mild laxative; and one,¹ two, or three teaspoonfuls may be given with a little milk at breakfast-time. A little gingerbread cake, given at night, keeps a small dog's bowels very regular; besides, it is appreciated.

For a purge for small dogs, one or two of the following pills may be given:—

Recipe:

Extract Colocynth	.	.	.	12	grains.
Extract Jalap	.	.	.	6	grains.
Septandrin	.	.	.	3	grains.
Extract Gentian	.	.	.	6	grains.
Podophyllum	.	.	.	3	grains.
Gingerine	.	.	.	1½	grains.

Mix.

Divide into 12 pills.

Sometimes it is difficult to give a dog a pill. In these cases, a powder may be administered, as jalapin. Two grains is the dose for a very small dog, and twelve grains for a big one like a great Dane or St. Bernard. It may be just shaken dry on the tongue or mixed with a little thick gruel. Cascara is suitable in many cases.

The following is a good cathartic pill for dogs varying in size from a fox-terrier to the biggest kind:—

Recipe:

Barbadoes Aloes	.	.	.	.	24	grains.
Gamboge	.	.	.	.	12	grains.
Jalap	.	.	.	.	24	grains.
Colocynth	.	.	.	.	12	grains.
Powdered Soap	.	.	.	.	12	grains.
Calomel	.	.	.	.	12	grains.
Gingerine	.	.	.	.	3	grains.

Excip. sufficient.

Mix.

¹ According to the size of the dog. See p. 81.

Divide into 12 pills—one, two, three, or four¹ to be given on an empty stomach.

In cases of skin disease, when purgative medicine is necessary, Epsom salts is the best. The dose varies from fifteen grains to one ounce,¹ given in some sweetened milk.

PURPURA: A disease not usually attended by fever, showing purple spots of effused blood, which are not effaced by pressure.

Symptoms: Extravasation of blood into the skin in very small pin-like spots, or even in large patches. They are first bright red, then turn purple, and afterwards become brown in colour. The same symptoms may occur on the tongue, also the cheek, and on the white parts of the eye, and also in the internal organs.

Treatment: When the spots are very small and few in number, no notice need be taken of them; but when there are large patches of extravasated blood, give from half a grain¹ to two grains of ergotine with double the quantity of reduced iron, made into a pill, two or three times a day. After a few days, commence a course of arsenic, give from one¹ to six drops of liquor arsenic (B.P.) three times a day in water after food.

In these cases, avoid giving much meat; fish may be given, or well-boiled tripe.

PYÆMIA (Blood-poisoning): *See also* SEPTICÆMIA.

Symptoms: This is an uncommon disease in dogs, but when it does occur it usually runs a rapid course, death often taking place in a few days. It generally results from some severe internal operation, though it may not come on until some months after the operation has taken place, then a large abscess forms in the liver. The attack commences, as a rule, by severe shivering, the temperature rises 3 or 4 or more degs. above normal;

¹ According to the size of the dog. See p. 81.

the pulse is very quick, often going up to 150. The dog refuses all food, is very thirsty, frequently vomits, and loses condition quickly. If the abscess bursts in the abdomen, peritonitis follows, and death soon takes place; but if it dries up (becomes caseated), then the dog gets better for a time, but other abscesses are almost sure to form; if not in the liver, kidneys, or lymphatic glands, they may in the lungs, when there is a recurrence of all the symptoms previously described.

Treatment: There is little to be done in these cases; a large dose of salicylate of quinine, say from two to ten grains,¹ should be given, and repeated once in six hours. If no improvement takes place by the following day, it is worth while to see what a surgical operation will do, though the chances of a cure by this mode of treatment are never very bright.

The dog's strength should be maintained with good strong beef tea, also Plasmon with milk, and nutritive suppositories and enemas. Brandy, too, should be freely given.

PYROSIS (Heart-burn) : See GASTRITIS.

Symptoms: The rejection from the stomach of a quantity of watery fluid. This is generally preceded by discomfort and restlessness, and rumbling in the stomach.

Treatment: Put dog on a milk diet for a few days; it may be given with Bengers' food, Plasmon, or Spratt's invalid food, or toast; also three or four times a day, about a quarter of an hour before food, give from two¹ to ten grains of subnitrate of bismuth. Do not give any meat.

RABIES : A true infective disease conveyed solely by inoculation, generally by the bite of an affected animal. The organism which causes the disease is present in the saliva, the urine and the tissues of the central nervous system of the affected animal. The period of incubation

¹ According to the size of the dog. See p. 81.

varies from two or three weeks to six months, with an average of three weeks.

There are two forms: (1) *Acute*, or furious; and (2) *Dumb*. These are sometimes not very distinct, showing symptoms of both.

Symptoms: As in most illnesses, this one commences with a loss of appetite, and a rise of temperature from 2 to 3 degs. above normal. The dog may be constantly licking himself at one particular spot, which is probably the place where he was bitten and inoculated.

The dog's disposition entirely changes; the cheerful animal becomes morose and sullen, the quiet one is restless, and the good-tempered dog quarrelsome, and there is an inclination to hide in dark corners, though when called by his owner he comes forward and is very affectionate, licking the hand and even the face, if allowed.

A rabid dog is generally depicted with a quantity of frothing saliva flowing from the mouth, like one suffering from epilepsy. This is a mistake; the mouth may certainly be a little moister than usual at first, but it soon becomes dry and of a dark red colour. The rabid dog is much inclined to attack others; the small, timid pet will, without provocation, bite both small and large dogs, and it is generally done cunningly, for he will often go quietly up to his victim and smell him, in the usual doggy way, and then suddenly bite him, and perhaps give a sort of howl immediately afterwards.

A rabid dog's voice is quite altered, and is very characteristic of the disease, but it is rather difficult to describe; it is half a bark and half a howl; it commences with a bark and finishes up with a dismal howl. A rabid dog is much disposed to wander if he can only get his liberty, and once he gets out he often goes for miles on a sort of jog-trot, with head and tail down, going out of his way to attack other dogs, but not so much human beings unless they get directly in his way, or interfere with him.

He may wander for hours, or perhaps a day and a night, and then return home. A rabid dog, though he refuses good food, will gnaw and eat all sorts of foreign substances; for instance, if he is in a kennel, he will gnaw and eat the woodwork; if behind railings or chained up, the ironwork, even to the extent of breaking his teeth. If confined in a room, he will gnaw the door, legs of chairs, carpets, curtains, etc. I have known one to eat his way through a two-inch door in a couple of hours. A rabid dog is not afraid of water; in fact, he drinks a good deal at first, before the symptoms are fully developed, and even during the latter stages, though he is unable to swallow, he will thrust his muzzle into a basin of water and try to drink.

As the disease advances, he becomes weak in the back legs, and ultimately quite paralysed, and if not killed, dies within four or five days; but some have been known to live as long as seven days.

In dumb rabies, so-called, the lower jaw is dropped in the early stages through paralysis, and the dog is unable to close the mouth. This is sometimes rather deceiving, as a person may think, perhaps, there is a bone fixed on the teeth, and opening the mouth to see, may get wounded by the teeth.

It is not often a rabid dog will attack his owner unless the latter tries to restrain him; but he will generally bite a stranger without hesitation or provocation. Rabies cannot arise spontaneously, or from any other cause whatever but inoculation by a bite from a dog suffering from the disease. The incubating period varies from a fortnight to six weeks; it has been known to extend to six months. There is no doubt that the saliva from a rabid dog's mouth, going into the eye of another dog, would in all probability induce the disease.

Preventive treatment for dogs is exactly the same as for human beings, and is useless unless it is undertaken

immediately after being bitten by a rabid animal. When symptoms commence no treatment is of any avail. The Pasteur institutions in various countries are the only places where treatment is easily obtained.

Treatment: There is no cure for this disease. Directly it is established, the dog should at once be destroyed, and shooting is the best and safest way of destroying such an animal.

I wish to dispel the idea which so many people have, that if a dog bites another dog, or even a man, and should then ever go mad, the second dog and also the man will go mad too; such a thing is impossible, even though the disease may be lying latent in the dog when he inflicted the bites. Pasteur, who was a great authority on rabies, used to say that a bite from a dog, even two days before there were any visible symptoms of the disease observed, was not dangerous.

RANULA: A cystic tumour under the tongue, connected with the duct of the sublingual salivary gland.

Symptoms: A large, bladder-like swelling under the tongue, which prevents the dog eating properly. In some cases the dog is unable to close the teeth together. The cause, in some cases, is due to some blockage of the duct of the gland which is situated under the tongue.

Treatment: A probe passed through the duct generally allows the accumulated fluid to escape, but in some cases the fluid in the swelling has become so thick that it cannot escape through the natural passage, even though cleared with a probe; then the sac should be freely laid open, and after squeezing out its contents, the cavity should be syringed well out with a solution of boracic acid—a teaspoonful of the acid to half a pint of warm water. It is sometimes necessary to curette the lining of the cyst and paint with iodine.

REDNESS OF SKIN:

Symptoms: A flushed or red condition of the skin

often occurs in white dogs. It is particularly noticed on the inside of the flaps of the ears, the inner side of the thighs and skin of the belly, or it may be general. The redness disappears on pressure, but returns when pressure is removed.

Treatment: Dust the part over three or four times a day with finely-powdered boracic acid. Pond's extract for small dogs, used with a swab. Treat dog for worms, and give some tonic medicine, as following pills:—

Recipe:

Sulphate of Iron	6 to 24 grains. ¹
Sulphate of Quinine	3 to 18 grains.
Confection of doses, <i>q.s.</i>	
Mix.	

Divide into 12 pills—one to be given twice a day.

A mild saline aperient should be given once a week. Epsom salts.

RESPIRATION (Artificial): When a dog has been nearly drowned, before resorting to artificial respiration he should be held upside down for a few moments, to drain the lungs of water, and then placed on his back with head extended, and after drawing the tongue slightly forward between the teeth, so as to keep throat quite clear, apply pressure to the chest (just where it joins the abdomen) with the open hand, in a forward and downward direction, so as to expand the chest—this should be repeated from eighteen to thirty times a minute, according to the size of the dog. After pressure, the hand should be removed quickly, so that the walls of the chest may assume their normal position. Whilst this is going on, another person should *inject brandy under the skin*, and rigorously work the legs so as to try and promote circulation. As soon as possible put hot-water bottles around the dog. Do not attempt to pour any—

¹ According to the size of the dog. See p. 81.

thing down the throat until dog is really conscious. *See also ASPHYXIA.*

RHEUMATIC GOUT :

Symptoms: There is no doubt that dogs do occasionally suffer from this disease, which affects generally the knees and hocks, but other joints may be attacked. The dog is very lame, the joint swells and is very tender, and there is a difficulty in bending it. Even after the inflammation has dispersed, the joint remains thickened and stiff for some time, in some cases permanently.

Treatment: Give a brisk purge, and also from two to fifteen grains ¹ of salicylate of soda three times a day in water after food. If joint very painful, use following lotion:—

Recipe:

Tr. Opium	4 drachms.
Water to	6 ounces.

Soak a strip of lint in the lotion, which wind round the joint; cover entirely over with oil-silk and bandage; change every six hours. When the inflammation and pain is less, cut the hair closely off over the joint, and paint with strong tincture of iodine, which repeat once in twenty-four hours. The iodine must not be applied to flexure side of joint where the skin is thin, tender and hairless.

When the joint remains enlarged and stiff for some time, a course of iodide of potassium, say from a quarter ¹ to two grains, may be given three times a day in a little water after food.

RHEUMATISM :

Symptoms: This disease may affect almost any part of a dog, and also dogs of all ages, though old ones are no doubt the more liable. When it attacks the muscles of the neck, it often assumes a spasmodic form, and the

¹ According to the size of the dog. See p. 81.

pain is sometimes very acute; the dog is unable to move his head in any direction, the muscles, from contraction, appear swollen, are very tender to the touch, and the dog cries with the pain. The attack generally lasts some hours, then it gradually subsides, and the dog seems all right for a while, when it may come on again. Then rheumatism often affects the shoulders, and when it does, it is called "Chest Founder". The parts are painful and stiff, and the dog walks with difficulty, dragging the fore feet along the ground. Bitches, when in low condition after rearing a litter of puppies, often suffer from this form. Then the loins, again, are a frequent seat of this disease, and when it affects this part it is called lumbago. The dog walks with arched back, and very stiffly—and as when the other parts of the body are affected, there is a good deal of pain. As the result of lumbago, a dog often loses the use of the hind legs for a time, and may become quite paralysed.

The disease is not confined only to these parts mentioned, as the joints of the fore and hind legs are liable, and a very characteristic symptom of rheumatism is its changing about quickly from one part to another, which is unlike any other disease. For instance, one day the dog may be going dead lame in one of the back legs, the next day the other hind leg may be affected, and the one that was bad the previous day quite free of pain, or the disease may leave the hind parts and go to one of the fore limbs. But this is not always the case, as the disease may settle in a joint, or some muscles, say of the loins, and remain stationary for a long time.

Treatment: This is practically the same at first, whatever part may be affected. The thing is to try and get the disease out of the system. It is always a good plan to commence with a good purge; after this has worked off, give a course of salicylate of soda, from two to fifteen

grains¹ three times a day, either in tabloid form, put up in cachets, or even dissolved in a little water. Kruschen salts; this can be given in capsules if preferable, five to thirty grains; a saltspoonful to a teaspoonful once a day in water for several days. If this medicine does not give relief, try two to ten grains aspirin or salicin—the doses are the same; one or other of these can be given in conjunction with the Kruschen. When the muscles of the neck are affected, the pain is often very acute, as mentioned before. In such cases it is frequently necessary to administer some sedative medicine, and for this I find there is nothing better than giving, subcutaneously, from one twentieth to one eighth of a grain¹ of acetate of morphia, with from $\frac{1}{300}$ th to $\frac{1}{150}$ th of a grain¹ of sulphate of atropine, the two to be dissolved in from five¹ to ten minims of water. The dose should be repeated night and morning for a few days. At first these injections may cause vomiting, but this soon ceases.

In cases of chest founder, or rheumatism in bitches in a weak condition, which occurs after rearing puppies, salicylate of quinine is often the best medicine to give, in doses from half to three grains¹ (made into a pill), three times a day.

Dogs suffering from rheumatism should be kept warm and quiet, the affected parts covered over with a thick layer of thermogen wool, and bandaged or rubbed with some liniment, as the following:—

Recipe:

Methylated Chloroform	.	.	4 drachms.
Laudanum	.	.	4 drachms.
Spirits of Camphor	.	.	1 ounce.
Soap Liniment	.	.	1 ounce.

Well mix.

Apply with friction night and morning.

Diet: Unless the patient is in poor health, should be

¹ According to the size of the dog. See p. 81.

light, *red meat being avoided*; and so should meat extracts and soups to a great extent. Fish, tripe (very well boiled), sweetbread, calves' head.

When the disease has assumed a chronic form, and settled in some joint, like the knee—a favourite place—strong tincture of iodine should be painted over the front and on each side of the joint every day for three days, or *iodex applied with friction twice a day for a longer period*; and iodide of potassium, in from half to two-grain¹ doses, be given two or three times a day.

RICKETS (Rachitis): A disease characterized by nutritional changes and deformities of the bones.

Causes: Hereditary weakness, unhygienic surroundings, improper food, impoverished mother's milk, feebleness of digestive powers, absence of the vitamins necessary for healthy bone formation and promotion of the proper proportion of lime salts, lack of *fresh air, sunlight, liberty*. Worms accentuate all the symptoms.

Ultra-violet rays *under professional advice* are always useful; and vitaglass in the kennels should not be overlooked; the expense is small compared with the loss of one good dog. Use the new electric sunshine lamps.

Preventive Treatment: This is of vital importance, and should be begun before the puppies are born. Unhealthy mothers produce rickety puppies, therefore pre-natal treatment is the only form of insurance against this wretchedly disappointing disease. Imagine any bitch, particularly of the large expensive breeds, sent to an expensive stud dog, having a promising litter of puppies, which develop rachitis and dash all the fond hopes that have been formed about them, cause much trouble, and result in very considerable expense.

Directly the bitch is thought to be in whelp, commence giving her *irradiated ergosterol*, together with Kepler's cod-liver oil and malt extract. For the large breeds:

¹ According to the size of the dog. See p. 81.

B. W. & Co., one tabloid irradiated ergosterol, one milligramme twice a day with a tablespoonful of the above cod-liver oil and malt.

Continue this for the bitch until the puppies are weaned, then cease treating the bitch. Commence at once with the *puppies*; if small breeds, one quarter tabloid ergosterol and teaspoonful cod-liver oil and malt extract (Kepler), giving large breeds *half a tabloid B. W. & Co., irradiated ergosterol 0.15 milligramme* twice a day, with teaspoonful cod-liver oil and malt. At three months a whole tabloid in dessertspoonful oil and malt until the pups are at least six months old, and dentition is completed. No other treatment that I know approaches this in effectiveness.

Food for the puppies should consist of plenty of raw meat and dry biscuits (Spratt's puppy), and a huge leg of beef bone sawn up into about three pieces, and sufficient raw meat left on to make it worth while their gnawing them; this helps their teeth through and prevents them eating pebbles, etc., etc. Many breeders who do not study expense give raw eggs, beginning with one, and as they get older increasing to three or even four a day for the largest breeds. I commend this especially to Irish wolfhound and greyhound breeders as a preventive.

Symptoms: A disease affecting puppies; if it does not commence before six months of age, it is not likely to occur. In some puppies it commences before they have left the nest, but, as a rule, it does not show itself before the puppy is two months old. The joints, especially the knees and hocks, become enlarged and irregular in shape, the pasterns weak; the puppy walks on the backs of his legs; the arms are bowed, the stifles enlarged and standing out, whilst the hocks turn inwards, giving a "cow-hock" appearance. The bones of the face may be swollen, and there may be a curvature of the spine.

The puppy, when suffering from rickets, is always

dwarfed in growth, very thin and miserable-looking; some are fat without normal healthy tissue, with pot belly, and always more or less in pain.

Treatment: When much below their normal size and weight, and badly crippled, they should be destroyed. When it is decided to treat a case, give worm medicine, also some chemical food, from ten drops¹ to a teaspoonful twice a day after eating, either in water or mixed with cod-liver oil. Bathe the limbs with sea water, or a solution of sea salt twice a day; but if very weak, bandage with strips of adhesive plaster, applied so that it does not interfere with the bending of the joints. The puppy should live out of doors, in a big gravelled yard if possible, and where there are people about to attract attention and to encourage movement. Give plenty of raw meat on a bone, if possible—the act of gnawing it off much improves the digestion; also give Spratt's malt and cod-liver oil biscuits, dry, as well as soaked in good soup. The puppy may have milk to drink instead of water. No treatment is of any use without fresh air, sunshine, and liberty.

RINGWORM (*Tinea Circinata*):

Cause: A contagious, vegetable, parasitic disease, due to the trichophyton fungus, showing more or less circular patches upon any part of head or body.

The microscope reveals the fungus.

Symptoms: Almost bare and nearly circular patches of skin, which is rough and scaly, with sometimes a few small red pimples on the places and a few short stumps of broken hair. The disease is very contagious to other animals, and *also to mankind*. Cats, rats and mice are very subject to ringworm, and frequently infect dogs.

Treatment: Dress all the spots daily with sulphurated calcium lotion, applied with a brush. After a week,

¹ According to the size of the dog. See p. 81.

dress the spots daily with borate of glycerine. Mercury ointments are efficient, but poisonous.

The disease may spread rapidly, when the irritation is considerable. Towels, brushes, combs, coats, collars, baskets, boxes, kennels must be submitted to the most drastic disinfection. Formalin candles in kennels or a cupboard (sealed up) in which can be placed everything that has been in contact with patient. Bedding should be burned. Nurse's or kennelman's hands washed with Cook's three per cent. mercurial soap, dog also, both to commence and finish each treatment, which may be somewhat protracted.

Favus: (*Achorion schönleinii* is the fungoid cause). Appearance and treatment much the same. Also contagious.

RUPTURE : *See* HERNIA.

SCALDS :

Symptoms: Skin inflamed and red, and very painful; blisters appear, which break, and matter forms. Unhealthy wounds result, which take a long time to heal. Hair removed, as the result of a burn or scald, never grows again.

Treatment: To remove the pain and inflammation, dab the parts freely with a dressing made of lime-water one part, linseed-oil two parts, mixed together (carron-oil). Later apply boracic ointment on lint, and bandage. The wounds must be kept clean by being occasionally sponged with warm boracic lotion. Keep dog from licking by bandage or coat.

SEA-SICKNESS : The nausea and vomiting which affects some dogs at sea. Causation is not determined. As dogs do not anticipate as do human beings regarding a sea trip, the cause cannot be of nervous origin, in the anticipatory sense, and I have always concluded that this uncomfortable trouble is of gastric origin, together with reflex action *via* the pneumo-gastric nerve. A liver pill

the day before sailing; a dose of chlorotone an hour or so before embarking; from two to five grains in gelatine capsule will generally put matters right and keep them so. With some dogs chlorotone causes sleepiness; it is perfectly harmless in these quantities and can be repeated in about three hours if necessary. I have never known it fail with dogs, and very seldom with human beings.

SEPTICÆMIA and PYÆMIA (Blood-poisoning):

Septicæmia: Is an infective disorder produced by the absorption of septic micro-organisms and their ptomaines, generated in an open wound or by inflammation. Two varieties: (1) septic intoxication; (2) septic infection.

(1) Septic intoxication most commonly met with in cases of whelping, retention of dead puppy or portions of after-birth which have become putrid; or in abdominal operation, or in bad drainage in large wounds and abscesses.

(2) Septic infection; due to absorption of ptomaines and septic bacteria in the blood and their subsequent proliferation. Appears three or four days after injury.

Symptoms: (Severe cases), restlessness, rigor or chill, rise in temperature, vomiting and diarrhœa; (milder cases), restlessness and fever.

Treatment (1 and 2): Remove causes if possible. Stimulants are one of the sheet anchors of these diseases. If sickness is persistent, use two to five grains chlorotone (it acts slowly); diarrhœa, salicylate bismuth five to fifteen grains three or four times a day; quinine salicylate and iron are sometimes called for; camphoric acid is largely useful and produces the best results, two to eight grains in pill form.

Pyæmia: Differs from the foregoing by the formation of abscesses generally found on the internal organs. Rigors and high temperature are bad symptoms, and usually fatal.

For all these poisons the treatment is identical: anti-streptococcic serum and polyvalent serum are frequently called for and used with success by a qualified surgeon.

SETON, How to put in a : Clip the hair closely over the parts of the skin for about the size of half-a-crown where the needle is to enter the skin, and also where it is to pass out; then wash with warm water and soap, and dry; then the skin should be anæsthetized with "Waite's Anæsthetic" at parts where the needle is to be used. The needle should be slightly curved and sharp-pointed, and threaded with a piece of half-inch tape, which should be smeared over with a little tur-



Seton Needle.

pentine ointment for about two inches in the centre, which is the part that is to be left under the skin. *The dog being muzzled*, a fold of skin from an inch and a half to four inches¹ should be well raised between the forefinger and thumb from the muscles underneath; then the point of the needle should be passed quickly through the raised skin where the hair has been removed; then draw the needle right through, and detach the tape. A knot should be tied at each end of the tape, about half an inch from the wounds, to prevent the seton coming out. The ends of the seton must be drawn backwards and forwards twice daily to allow the discharge to escape, and a little turpentine ointment rubbed on the

¹ According to the size of the dog. See p. 81.

tape every day for three or four days. The wounds must be kept very clean. A seton may be allowed to remain in from one to four weeks.

A seton placed on the back of the neck, running from just behind the back of one ear to the other, is a useful form of counter irritant in cases of chronic epilepsy, also for distemper fits.

In cases of general paralysis, when all four legs are affected, a seton placed on either side of the neck, running along the course of the spine, often does good; also when placed in the loins, one on either side of the spine, in paraplegia or paralysis of the hind quarters.

In pneumonia a seton may be placed in front of the chest, running from the inside of one shoulder-joint to the other.

Troublesome cysts that are difficult to disperse, like those found in the flaps of the ear, may often be cured by running a seton through it, and keeping this there for a few days.

A small seton placed in the skin of throat, just in front of the larynx, is useful in cases of chronic cough. The use of the seton has largely ceased, but is sometimes called for, and sometimes useful.

SEXUAL EXCITEMENT :

Symptoms: Some dogs are constantly worrying themselves, getting on people's feet and legs, and working their body, which is most disagreeable. Very often any amount of chastising fails to stop the disagreeable habit, but if the dog is young, there are always hopes that he will improve with time, for, as a rule, when he is a year old the disagreeable habit ceases; but there are some few dogs who continue to misbehave themselves, whenever an opportunity occurs, the whole of their lives, and the only cure is to have them castrated, which is a certain remedy. This operation does not seem to affect a dog's health or spirits.

SHAKING PALSY :

Symptoms: Trembling of the limbs, particularly the back ones, when standing, although when walking the dog may go with a normal gait. It is a condition that is more often seen in the large breeds and fox-terrier dogs than in the small toy breeds, particularly those with straight hocks and stifle joints. It may also occur as the result of advanced age even in small dogs.

Treatment: Medicine is seldom of any use, although sometimes a course of nux vomica appears to do some good, and is worth a trial, unless there is some physical defect. The dose is from one to eight drops,¹ given in water after food, and repeated two or three times a day.

SHOCK: May be produced by injuries, result of operation, fright.

Symptoms: The dog is generally in a semi-comatose or unconscious condition, lying on the side; the breathing is feeble and slow; the pulse almost, if not quite, imperceptible; the mouth and also the membranes of the eyes are quite white; the limbs are cold, and if the temperature be taken, it is often 5 or 6 degs. below normal. This condition may be due to loss of blood or the result of internal injury, as after an accident—for instance, being run over by some vehicle.

Treatment: Place the dog on his right side, and keep the head low; give stimulants, as brandy, from ten drops to a couple of teaspoonfuls or more according to breed, in a little water. If the dog is unable to swallow, inject from ten¹ to sixty drops under the skin. This may be repeated in half an hour, if necessary. Also give hypodermic injections of pituitrin; repeat in two hours. Hypodermic injections of hot saline solutions (skin over ribs) if after operation with loss of blood. Transfusion of blood, apply hot-water bottles to the back and well hand-rub the limbs. Injections and transfusions by M.R.C.V.S.

¹ According to the size of the dog. See p. 81.

SNAKE-BITE : *See* POISON ANTIDOTES (TABLE).

Symptoms: Swelling, redness, and great pain at the part bitten. The breathing becomes heavy and laborious; paralysis sets in; and later, convulsions and death.

Treatment: A ligature applied as tightly as possible above the part bitten, between the bite and the heart; *freely open* the actual part bitten and rub in Condyl's fluid to open wound. Give stimulants freely, as brandy or sal volatile, the latter well diluted with water.

SNORING :

Symptoms: This condition is particularly noticed in old, fat dogs, especially pugs, and other dogs with a short nose.

Treatment: When a dog has naturally an exceptionally short nose, there is little to be done. Sometimes when the snoring is worse than usual, a dose of purgative medicine gives some relief. When the dog is very fat, take means to make him thinner. (*See* articles on STOUTNESS and BREATHING, difficulties of, and elongated soft palate, etc.)

SNORTING :

Symptoms: The dog stands with all four legs outstretched and nose extended, and draws the air sharply through his nose as if trying to remove some obstruction in the nasal passages or throat. It may occur at any time, but more often when first going out of doors into the cool air. Snorting often occurs after a cold or distemper. It is also a symptom of a polypus in the nose, and worms in the nasal passages; and dogs suffering from stomach disorders often snort; indeed this is more often the cause than nasal obstruction.

Treatment: When the result of some simple obstruction of mucus, as from cold or distemper, syringing the nose thoroughly with a solution of common salt (five grains to each ounce of water) gives relief. If the irritation proceeds from the fauces or throat, an emetic should be

given, and purgative medicine is indicated if the stomach be deranged. Also treatment for worms which frequently reach the stomach. When the condition is due to a polypus, a surgical operation is necessary. Parasites in the nose are difficult to dislodge, but sometimes an ounce of a solution of Jeyes' disinfectant fluid (one in a hundred) syringed up each nostril has the desired effect (after effectually covering dog's eyes). I may add that worms in the nostrils of dogs living in England are of rare occurrence, unless they reach the nasal cavity by way of the posterior nares when the patient has been sick.

SPAYING : This is an operation occasionally performed on bitches to prevent breeding. Though it succeeds in this respect, it seldom prevents the bitch operated upon coming into œstrum or being troublesome with male dogs. For this and other reasons, the operation is not recommended.

SPRAINS :

Symptoms: Pain and swelling of the injured parts, followed, as a rule, by discoloration, lameness.

Treatment: If where a bandage can be applied, the following lotion on lint is recommended:—

Recipe:

Goulard's Extract of Lead	.	1 drachm.
Laudanum		2 drachms.
Water to		6 ounces.
Mix.		

A piece of lint should be soaked in the lotion, placed over or around the injured part; this should be covered with a piece of oil-silk, taking care that it entirely covers the lint, and then a bandage applied. Repeat every eight hours. If the injury has occurred where a bandage cannot easily be applied, the following liniment is recommended:—

Recipe:

Chloroform	4 drachms.
Tincture Hyoscyamus . .	4 drachms.
Spirits of Camphor . .	1 ounce.
Soap Liniment	2 ounces.

Mix.

Apply with gentle friction twice a day.

In cases of sprains, keep the dog quiet for a week or so, and then give gentle exercise: swimming, for preference, if the weather is suitable, and the dog takes quietly to the water. Swimming gives exercise without weight-bearing or concussion.

In these cases, a free dose of purgative medicine, given as soon after the accident as possible, is beneficial.

STIFLE JOINT, Injury to: This joint appears to be a particularly weak one in dogs, and is very liable to injury, due to slipping, or twisting of the leg. This arises from the groove in which the patella (knee bone) works being very shallow in the dog.

Symptoms: The dog is very lame, and often carries the leg. If he puts it down, he stands with only the points of the toe touching the ground, and placed just behind the other leg. The joint becomes swollen, more particularly on the inside, and is very painful.

Treatment: These cases are always long ones; *absolute rest* for about three weeks; no jumping up or down, in and out of chairs, etc., or using the stairs. A bad injury to this joint means the dog being lame very often for two or three months. If the case is taken in hand at once, hot poppy-head fomentation is the best application, and should be applied two or three times a day. After three or four days, the following liniment may be applied night and morning all around the joint, but particularly on the inside, where the principal swelling is:—

Recipe: The Liniment:

Chloroform	4 drachms.
Tincture Hyoscyamus . .	4 drachms.
Spirits of Camphor . .	1 ounce.
Soap Liniment	2 ounces.

When the inflammation has passed, the dog often continues to go lame for some time, owing to the joint being stiff. This condition is relieved by gently and firmly massaging the whole circumference of the joint and afterwards rubbing in iodex.

In all cases of injury of the stifle joint, the dog should be, for the first two or three weeks, kept absolutely quiet, and then gentle walking exercises may be given. Later, it is a good plan to give the dog swimming exercise; if weather suitable, this gives exercise *without* weight-bearing or concussion.

STINGS :

Symptoms: Pain, swelling and redness of the part. A dog sometimes gets stung on the tongue by a bee or wasp, and the swelling which afterwards occurs is often serious.

Treatment: When possible, extract the sting, and apply a solution of ammonia; ammoniated tincture of quinine is one of the best preparations for this purpose. When the tongue has been stung, after extracting the sting and applying the ammonia *sparingly*, ice should be applied to reduce the swelling. If throat is much swollen, feed per rectum and give homœopathic trituration (apis 1) five grains every three hours in a little warm water.

STOUTNESS :

Symptoms: A general increase of the fatty constituents of the body; the neck becomes thick and seems shorter; the body is enlarged, especially the abdomen, which is hard and distended. The dog walks with difficulty, is constantly panting, and often has an asthmatical cough. The heart's action is generally weak and feeble, owing

to fat tissue round the part, or in old dogs fatty degeneration.

Treatment: More good is to be done by dieting in these cases than medicine, and often great benefit is derived by feeding sparingly and entirely on lean raw meat. As to quantity, this, of course, must depend on the size of the dog, but if half the quantity in bulk is given to that which the dog has been in the habit of having, this should be about the right amount. Feed twice a day. Also give, at least once a week, a dose of Epsom or Kruschen salts, and make the dog take some exercise, which should be gradually increased. Only allow the dog to drink water, *a little at a time*, and about four times a day.

STYE :

Symptoms: A small, hard, red swelling on the edge of the eyelid. This condition sometimes occurs in dogs during or after distemper.

Treatment: It can often be cured at once during the early stages by extracting the eyelash around the roots of which the styne has formed. If treated later, the parts should be fomented with hot poppy-head tea, with the addition of boracic acid. This should be made by boiling for ten minutes two crushed poppy-heads in a quart of water, then strain through fine muslin and add a dessert-spoonful of boracic acid. Apply with piece of absorbent wool for ten or fifteen minutes as hot as can comfortably be borne. Repeat three or four times a day.

SUFFOCATION (Asphyxia): Interruption of the function of respiration.

Symptoms: May be the result of partial drowning, or of a piece of food or some foreign body being fixed in the fauces or throat. The dog gasps for breath; the eyes are staring and prominent; the mouth is generally fixed open, and the tongue is of a dark blue colour.

Dogs are often suffocated in hot weather whilst travelling,

through being shut up in a too small or badly-ventilated box, or in a box where the dog has been chained up and chain fastened to inside of box; the dog by constant turning has choked himself. As a rule, such cases are not found out until the dog arrives at his destination, when the box is opened, and he is found lying dead at the bottom of it. Sometimes the dog is not quite dead, though unconscious. The breathing is very slow and shallow; the pulse imperceptible. The body is cold, and the tongue a dark blue colour.

Treatment: At once remove the cause if possible. If some foreign body or food is lodged in the throat, it must be removed—brought up or pushed down. If no forceps are at hand, one can often remove the substance with the finger, bent in the form of a hook. If it cannot be brought up, it must be pushed down, so that the breathing may be relieved as quickly as possible. If the dog is unconscious, dash cold and hot water alternately on the face; slap the body hard with the hand. If the suffocation is due to partial drowning, artificial respiration is necessary. (*See article on that subject.*)

In cases that result from insufficient air, take the dog out into the open, that he may have as much air as possible. Hold from one to three drops ¹ of nitrate of amyl upon a piece of blotting-paper or handkerchief to the nose, or a few drops of strong ammonia; repeat in ten or fifteen minutes. Well hand-rub and work the limbs to promote circulation; and if not soon better, bleed rather freely from both ear flaps, which is a safe method; opening veins is not for the average person. Stimulants are indicated.

SUNSTROKE: Exposure to hot sun, generally after continuous exercise during hot, sunny weather. Remove dog to cool, shady place, with plenty of fresh air.

Symptoms: Dog is usually taken suddenly ill, and generally falls to the ground in an unconscious condition.

The breathing is heavy, slow, and laboured, the pulse full and quick, the tongue and membrane of the mouth are of a bluish colour, and the eyes are very congested. The dog may vomit and have diarrhœa. The attack may quickly terminate fatally, or paralysis follow. I have seen lock-jaw result from sunstroke.

Treatment: Give a hot bath for body; apply ice-bag to head and back of neck; smelling salts. As soon as the dog is able to swallow give a good purge, as from half¹ to three drops of croton oil in from one¹ teaspoonful to two tablespoonfuls castor oil. If there are convulsions, give medicine as for epilepsy and convulsions.

SUPERFLUOUS HAIR:

Symptoms: The only place that I have seen this occur in a dog is on the cornea of the eye, which causes a constant watery discharge; and there is a tendency to keep the eye closed (pterygium).

Treatment: Nothing but an operation is of any use. This consists in carefully cutting off the small piece of tissue on which the hair grows. First apply four per cent. solution cocaine hypodermically. There is little or no blemish as a result of the operation. This requires professional aid, as special knowledge and special instruments are necessary. Afterwards, for a few days, bathe the eye occasionally with boracic lotion, half a drachm to six ounces of water, and keep feet on affected side well bandaged fore and aft.

SYNOVITIS (Inflammation of a Joint):

Symptoms: Great lameness, the dog probably not being able to put the leg to the ground at all. The joint is much swollen, very painful, and red. It is generally the result of an injury.

Treatment: Give at once a dose of purgative medicine; absolute rest is necessary; and use the following lotion:—

¹ According to the size of the dog. See p. 81.

Recipe:

Goulard's Extract of Lead	.	.	1 drachm.
Laudanum	.	.	2 drachms.
Distilled Water to	.	.	6 ounces.

Saturate a piece of lint sufficiently wide to cover the joint, and long enough to go round it; cover over entirely with oil-silk, and apply a bandage. The lotion should be repeated every four or five hours.

If, after the pain and inflammation has passed, the joint remains swollen, rub sparingly into the part once a day a liniment made with equal parts of colourless tincture of iodine and soap liniment. Should the joint become stiff and callous, it may be necessary to apply a mercurial blister.

TAIL, Sores at the Tip of :

Symptoms: Big dogs with long tails, especially great Danes and Irish wolfhounds and those confined in kennels, frequently suffer from a sore at the tip of the tail, which, in many cases, is most difficult to cure.

Treatment: Thoroughly cleanse the wound with a solution of chinosol lotion, ten grains to eight ounces of water, and when well dried, dust over with powdered iodoform and cover the sore with a few layers of gauze, and as it is impossible to keep a bandage on, several layers of Mead's plaster should be placed over the end of the tail, which prevents further bruising. Aluminium tail shields, ventilated and open at the end, are now on sale, but padding the sides of the kennel should be just as carefully carried out and continued for a month or two, and in some individual cases it is a continuous necessity. In some cases it is necessary to make the dog wear a leather bag over the tail. This should be fastened around the loins. The part covering the tip should be of double thickness.

When well, it is a good plan when a dog is always banging his tail about, to pad his kennel with sacks

stuffed with straw, to prevent his injuring it again, for once a tail has been hurt, it remains tender, and is more liable to injury. Boro-glycerine will soften the parts when healed and render them less likely to split or bruise.

TEATS (Crack in) :

Symptoms: A bitch, when nursing puppies, often suffers from the teats cracking; the parts become swollen, inflamed, and very painful.

Treatment: Keep clean with boracic lotion, and anoint night and morning with boracic ointment. A few grains of bicarbonate of potash, mixed with the food, cools the blood.

TEETH : Dogs, like most other mammals, have two sets of teeth. The first are temporary, and, from their whiteness, they are often called the milk teeth; they are twenty-eight in number. The second set are permanent, and therefore not deciduous; they are forty-two, and sometimes forty-four, in number.

A set of teeth consists of three different kinds. Those situated in the front or anterior part of mouth are called the *incisors*, those placed immediately behind the incisors are called the *tusks* or *canines*, and behind those are the *molars*.

Each tooth is divided into three parts. The free, or part that is seen when looking into the mouth, is called the crown; then there is the neck or constricted part, which is encircled by the gum, and divides the crown from the fang or root, which is inserted in a cavity (the Alveolus) in the jaw-bone.

Each tooth is made up of three different structures. The external, or enamel, which gives the new tooth its beautiful white appearance, and consists only of a somewhat thin layer, and covers the crown of the tooth only. Immediately underneath the enamel is situated the ivory or dentine, of which the tooth, including the fang, principally consists. In the centre of the fang is a for-

men, or small cavity, containing the pulp, consisting of a membrane nerve and small blood-vessels to supply nourishment, etc., to the tooth.

The *incisors*, twelve in number, both in the temporary as well as in the permanent set, are for distinction divided into *nippers*, which are the two centre ones; *intermediates*, are those situated next to the nippers, and *corners*, the latter being placed next to the tusks.

The crown of an incisor tooth presents three prominences—a middle, which is the strongest, and two lateral. On the internal surface of the tooth is noticed a slope, somewhat resembling that found in an ox's or sheep's tooth. The root is well developed, longer than the crown, and flattened on both sides.

The tusks, four in number, in both sets are strong, elongated organs, conical in form, and curved in an outward and backward direction. The upper fangs are the strongest, and there is a small space between them and the corner incisor teeth, in which the lower tusks are situated when the mouth is closed. Most of the molars terminate in sharp lobes, and, consequently, are well adapted for tearing and crushing. They are, as a rule, twenty-six in number, seven on each side of the lower jaw, and six on each side of the upper one; but sometimes there are seven on each side of the upper jaw, the same as the lower. It is not an uncommon occurrence for dogs with short faces, like bulldogs, spaniels, and pugs, to have only five upper molars, and six lower molars. But there are only twelve temporary molars—three on each side of both jaws.

A puppy, when born, has no teeth visible, though the milk ones are formed and in the gums, and in some cases their outline may be seen through the mucous membrane.

The milk teeth are smaller, softer, and more pointed than the permanent ones, and they are not situated so closely together. The tusks, too, are slightly pink in

colour just above the neck, which is not the case with the second ones.

Puppies of different breeds vary in the time when they cut their teeth, those of the larger kinds cutting them earlier than small dogs; and though a fox-terrier puppy's teeth appear earlier than a toy terrier's, yet St. Bernards have them still earlier.

The process of dentition of the milk teeth is usually carried on without any trouble at all to the puppy. Such is not the case with respect to the cutting of the permanent ones, for it is a very common occurrence for puppies at this time to have convulsions. In other cases, at this period, eczema is very often troublesome, and, in some instances, continues after dentition is completed.

With regard to the cutting of the deciduous teeth, the first to appear, in most cases, are the middle molars on each side of the lower jaw. These pierce the gums in puppies of large breeds like St. Bernards, about the eighteenth or nineteenth day after birth. Puppies, like greyhounds, retrievers, fox-terriers, and others of similar size, do not cut these same teeth until about four days later, whilst puppies of the toy class are often a week later still.

About a day after the second lower molars have appeared, the upper incisors show themselves; the nippers and intermediates are the first to make their appearance. These are followed the next day by the upper corner incisors, and about the same time the lower corner incisors pass through the gums, and the tusks are erupted; but it often happens that all the incisors pass through the gums together, and the tusks at the same time, or just a day or so later.

About the fourth week, the last or third lower molar, and also the first one, have been cut, and are fairly well up; and about two days later, the middle upper molar

is just appearing. In a day or two more, the last upper molar is erupted; and a couple of days afterwards, the first upper molar, which is the last to be cut, now makes its appearance.

By this, it will be seen that large puppies, like St. Bernards, have a complete set of milk teeth by the fifth week. Puppies of the smaller breeds are, as previously stated, a few days later.

It may be here remarked, that bitch puppies invariably cut their teeth rather better, and somewhat earlier, than dogs. Winter puppies are a little later in getting their teeth than those born in the spring.

The milk teeth are seldom placed close together, and as the puppy grows, they become still wider apart. This fact is useful in helping one to ascertain the age of a puppy.

The deciduous teeth are much softer than the permanent ones, and when a pup is three months old, if it has had any hard food, the points of the tusks and incisors are worn off.

When a puppy is about three and a half to four months old, the upper incisor nippers are loose, and sometimes have fallen out, and the permanent ones are just coming through the gums at this part. At the same time, the fourth upper molar, which is the fourth from the tusk, makes its appearance. (It will be noticed that though the lower temporary molars are cut before the upper ones, the reverse is the case with the permanent teeth.) In the course of another few days, or a week, the other upper deciduous incisors are shed, the permanent ones appearing in their place, then the lower milk incisors commence to fall out, and the new ones to make their appearance. About the same time the tusks are showing themselves through the gums. In some cases, the tusks do not appear until all the other teeth are up. This is about the general order in which the teeth are cut, but

of course there are exceptions, and in some instances, the permanent tusks appear just after the eruption of the upper centre incisors.

It does not always happen that the temporary teeth are shed before the permanent ones appear, and the latter shoot up either beside, in front, or behind the milk teeth. Then the latter teeth should always be drawn, or the permanent ones may not come straight and regular.

With regard to the permanent molars, the first to appear, as previously stated, is the fourth one. It makes its appearance just behind the last temporary molar. Before it is fully up, the fifth upper molar has passed through the gum. At about this same time the fifth, or large permanent lower molar, is appearing; this is quickly followed by the sixth, and again by the seventh. About the same time as these two latter teeth are erupting, the temporary molars in the same jaw are falling out, and their places are being filled by permanent ones. About a week later, the first lower milk molar is shed and the permanent one cut; this is followed by the second and third ones. The corresponding teeth on each side of the jaw, as, for instance, the fourth molar on the left and right sides, are erupted simultaneously. By the time puppies, such as St. Bernards, mastiffs, retrievers, and others of similar size, are about four months old, the process of dentition is complete. Fox-terriers, and other dogs of this size, are in some cases a fortnight later, and small toy dogs are often from six to eight months of age, or even older, before the mouth is fully furnished.

It is impossible to tell the age of a dog with any certainty after dentition is finished, but up to then one can judge the age to within a fortnight, if it is borne in mind how the teeth are erupted. After this time, and up to a year or eighteen months, if, together with the

condition of the incisor teeth, whose middle prominences at this time show signs of wear, one takes into consideration the general appearance of a dog, a fair judgment as to age may be formed.

Later, the wear of the teeth gives no good idea of the age, because so much depends upon the kind of food the animal eats, whether it is hard or soft. When a dog is fed on bread and gravy or meat, the teeth will show little or no signs of wear when he is two or three years old, while the incisor teeth of another dog of the same age will commence to become blunted if biscuits form the staple food. The teeth become still more worn if a large number of bones are given as a part of the diet. And again, dogs who are always playing with and carrying stones often wear the incisor teeth right down to the gums, and the tusks become worn in the course of a few years.

As a rule, if a dog is fed on a mixed diet, as bread and vegetables, soaked biscuits, etc., and not given many bones, and is not allowed to carry stones, then the teeth (incisors and tusks) preserve their shape and position until the fourth year. But by this time the teeth have lost their *very* white colour, and have become of a palish yellow hue. As the dog advances in years the teeth become still more yellow, besides becoming coated with tartar just above the neck of the tooth, if they have not been occasionally scaled. The tusks, too, now become blunted, and to some degree are altered in position, being inclined to take a more outward direction. It is therefore an easy matter to distinguish between an old and a young dog.

The teeth of dogs that are pig-jawed, and those that are undershot like bulldogs, do not, of course, wear to the same extent as when the incisors meet, forming an even mouth.

When the permanent teeth come up crooked, it is a

most difficult thing to redirect them, especially when the tusks are at fault, and they are generally the offenders; for these teeth are so firmly and deeply fixed in the jaw-bone that it is impossible, without employing great force, to move them, and from their conical shape it is almost impossible to fix a rubber band or wire to them unless a small niche is made in the enamel, and this damages the teeth and renders them liable to decay. When the tusks grow inwards so as to injure the palate, I have, after a great deal of trouble, fixed a wedge made of hard wood between the two tusks of the lower jaw, but it always comes out within a few hours. Again, when the incisors, or front teeth, come up twisted or crooked, and one tries to turn them with forceps, the operation is seldom successful; the tooth is almost sure to break, as dogs' teeth are so brittle. More good is to be done by pressing the erring teeth in the right direction with the fingers; and when they are not very badly misplaced, a good deal of benefit may be derived by this simple treatment. It should be done two or three times a day for ten minutes at a time. Pressure of this kind is very useful to the upper or lower incisor teeth in slight cases of undershot—that is, when the lower incisor teeth project in front of the upper ones; or when the upper incisor teeth project in front of the lower ones—called “pig-jaw”. Either of these conditions is a great drawback to a terrier; and some judges, who are particular, and examine the mouth, will often put a dog back for this defect. In bad cases I think they are right to do so; but it is rather hard on the dog when there is only a slight unevenness, because I think he can hold just as well as one with an even mouth.

There is no doubt a pig-jaw is a much more serious malformation than one that is underhung, as it is absolutely impossible for a dog with such a mouth to bite or seize his prey firmly and hold it. This is a very

common deformity with collies and greyhounds, and very ugly it looks—the former are not required to bite, but at the same time the condition, when very marked, should disqualify a dog on the show bench, for there is no doubt that it is hereditary. Another condition of the teeth, and one for which judges often put a terrier back, is canker. It is a diseased condition of the enamel, which gives the teeth a speckled appearance. In my opinion, canker of the teeth is not hereditary; and it is in nine cases out of ten the result of a dog having distemper in early life—I mean before the eruption or cutting of the permanent teeth. The high fever which accompanies distemper seems to eat away the enamel. Teeth when badly affected in this way are soft, and wear away quicker than sound ones; besides, they look bad. There is nothing to be done in these cases, except brushing them occasionally; to scrape them does harm.

Toy dogs' teeth go wrong much quicker than bigger ones, more especially Yorkshire terriers, spaniels, and pugs. I have seen many a Yorkshire terrier three years old with half the teeth gone, and the remaining ones covered thick with tartar. The condition, in a great measure, is due to feeding, but some bad teeth are no doubt also hereditary. All dogs should have something hard to gnaw every day, either a hard dog-biscuit or bone—not game or poultry bones, of course, or cutlet or chop bones, for these are more dangerous than game bones, but a good big bone; for small dogs a leg-of-mutton bone, and for large ones a marrow or some other such bone. Puppies, from the time they are weaned, should be given bones, as this often prevents their eating stones and other indigestible articles. Tartar should never be allowed to remain and accumulate; it irritates the gums, and causes them to recede, and then the teeth soon get loose. Once the teeth are cleaned, they may be kept white if owners will take the trouble to brush them daily, using some

powder. The best kind I know of is carbolated eucalyptus powder, as prepared by Messrs. Hucklebridge, of 116 Ebury Street, London, S.W. I mention the name and address, as I do not know of anyone else who makes it, and carbolic powder is not suitable for dogs. The scaling or scraping of the teeth may be done with the point of a penknife or an ordinary steel nail-cleaner, but one must be careful in using these instruments or the gums may be injured. To lessen the risk of doing so, it is much better to buy a proper instrument, which can be bought for half-a-crown from Krohne & Sesemann, Duke Street, Manchester Square, London, W.

Loose teeth should be removed, as they only do harm when left, besides causing inconvenience to the dog whilst eating. Sometimes it becomes necessary in very old dogs to remove all the teeth; and when the food is given soft, and cut up small, they appear to do very well without them; their breath is certainly a good deal sweeter, and their gums get extremely hard and useful.

Occasionally an abscess forms at the root of the large upper molar tooth; the face swells just under the eye. The abscess, after a few days, generally breaks. The swelling should be fomented with hot boracic lotion, but to effect a cure, the tooth must be removed. It is a difficult one to extract unless it is loose, and no amateur should attempt to do it. An anæsthetic ought always to be given; this molar tooth has trifurcate fangs, and it is quite easy to break off one of these three roots.

TEETH (Cutting the Tusks): It is sometimes necessary with sheep-dogs, dogs used for catching deer, and dogs in the habit of biting and fighting, to cut the tusks level with the incisor teeth. This is best done with a pair of strong bone forceps or wire nippers. The operation apparently causes very little inconvenience or pain, for the dog is always ready to eat immediately afterwards.

TEETH, Tartar on the :

Symptoms: Dogs always fed on soft food and never having anything hard to eat, get their teeth covered with brown-coloured tartar early in life, even sometimes before two years old. If this is not from time to time removed, it continues to increase, until at last the whole tooth becomes thickly encrusted, and to such an extent, in old pet dogs particularly, that the mouth is unable to be closed. As the result of the tartar, the gums become swollen, inflamed, and tender; they recede from the neck of the teeth, which become loose. A dog with teeth in this state is always dribbling, and eats with difficulty, and the breath is often most offensive.

Treatment: Dogs should always be encouraged to eat something hard daily—a piece of dog-biscuit does very well; if this is refused, a hard bone, one that cannot be eaten, should be given to gnaw. This, of course, is only a preventative, and when regularly attended to, the teeth and gums remain good and sound for years. When once tartar has accumulated, nothing will remove it but scraping; which should be done regularly two or three times a year, and if this is done, and the teeth daily cleaned with an ordinary soft tooth-brush, moistened with warm water and a little of the following powder sprinkled on it, they will keep clean and white, and the breath sweet so long as the dog lives:—

Recipe: Tooth Powder:

Powdered Boracic Acid . . .	10 grains.
Camphorated Chalk . . .	1 ounce.
Well mix.	

Removing the tartar from a tooth that is somewhat loose does not tighten it, though it preserves the tooth, and for a time often prevents it becoming looser. It is impossible to remove tartar from a very loose tooth, and for the dog's comfort it should be extracted at once.

TEMPERATURE : The normal temperature of a dog is 101.5 degs. F. ($101\frac{1}{2}$ degs.), taken in the bowel. To know the temperature of the body is very important in treating disease, more especially in cases of distemper; for it is a fact that so long as a dog does not have a high temperature when suffering from this complaint, the attack is not a severe one, and the dog, apart from accident or relapse, has a good chance of recovery. When the temperature is high, say 104 or 105 degs. F., and continues so for some days, the case is always a serious one, and if it continues, complications, especially those of the nervous system, are almost sure to ensue. These remarks not only refer to distemper, but to all other diseases in which a high temperature is one of the symptoms; as, for instance, inflammation of the womb, blood-poisoning, pneumonia, peritonitis, diseases of the brain, formation of abscesses, etc.

In many cases it is not necessary to take much notice of the temperature beyond watching it carefully, and keeping a daily record of its rising and falling, but when it keeps persistently high, say over 104 degs. F., then special medicine must be given to try and reduce it. There are many medicines which have the power of reducing the temperature, and when they are going to have a good effect they generally work quickly. If they do not succeed in reducing the temperature, say, within forty-eight hours, they should not be persevered in, as then they only do harm.

Aspirin or antipyrin, in doses from two ¹ to ten grains, given in a cachet, is one of the best antipyretics. Phenacetin, given in doses varying from half a grain ¹ to five grains; salicylate of soda, aspirin and salicine, in doses from two to fifteen grains ¹ in a cachet, tablet, or dissolved in water, and repeated three or four times a day.

In some cases when these fail, salicylate of quinine

¹ According to the size of the dog. See p. 81.

will have the desired effect, in doses from one¹ to five grains, given in a cachet. If this fails to reduce the temperature, then an ice-bag may be tried, applied intermittently to the top of the head for an hour (an ice-bag kept continuously on any part freezes it and causes pain and damage to the part, hence the necessity for regular intermittence), and then all medicines are discontinued for the time being. A little brandy, say from five drops¹ to a teaspoonful, given in water or milk every two, three, or four hours is advisable.

A very low temperature, say when the thermometer will not rise above 95 degs. F., is much more dangerous than a very high temperature. In such cases, prompt measures must be taken to try and warm the animal. Hot sponges should be applied to the head; also hot-water bottles applied to the back and to the feet. From five¹ to twenty drops of sulphuric ether may be given every hour or so, in from a teaspoonful¹ to a tablespoonful of water. Strong warm coffee may also be given, from a teaspoonful¹ to a tablespoonful, repeated every half hour. If the dog is very much collapsed, and unable to swallow, strong warm coffee may be given as an enema, say, from a dessertspoonful¹ to two ounces, and repeated every half hour. Brandy may also be given, injected under the skin, say from ten drops¹ to a teaspoonful, or very minute doses of strychnine may be given, from the four-hundredth part of a grain¹ for a small dog, to the one-hundred-and-fiftieth part of a grain for a large one. This medicine may be given dissolved in from one¹ to five drops of tincture digitalis in twenty drops brandy and some water.

In such cases as these the dog must be given, if he will swallow, small doses of some strong beef essence as from ten drops¹ to a teaspoonful of Valentine's beef

¹ According to the size of the dog. See p. 81.

juice, in from a teaspoonful ¹ to a tablespoonful of milk, repeated every half hour or so.

TESTICLE, Inflammation of :

Symptoms: The gland is swollen and very painful to the touch, the scrotum is generally inflamed, red, and thickened. The dog walks with stiffness in the hind legs, and there is generally a rise of two or three degrees of the temperature.

Treatment: Frequent hot poppy-head tea fomentations, made by boiling for ten minutes two crushed poppy-heads in a quart of boiling water and then straining the solid matter out through fine muslin. Aperient medicine should be given and the dog kept on a light diet for a few days, with complete rest,

TESTICLES, Enlargement of :

Symptoms: The gland or glands are more or less enlarged, and have become so as the result, in most cases, of some injury; but occasionally the causes cannot be traced: this is especially so with old dogs. The condition is not of uncommon occurrence. It is not often that both glands are affected.

Treatment: Medicinal treatment in these cases is useless. If the gland is much enlarged and continues to increase in size, it should be removed by operation; but very often after getting to a certain size it ceases to increase, and if it does not cause any discomfort by hanging very low and interfering with the dog's walking, or looks very unsightly, it may be left alone, especially if the patient is an aged one, and it is an old dog's complaint.

TETANUS :

Symptoms: A rare disease in dogs, but follows any wound into which the tetanus bacillus has entered (it is a specific bacillus of dust and dirt). Often it is difficult to account for the cause. The disease, when it attacks dogs, generally only affects the muscles of the

¹ According to the size of the dog. See p. 81.

jaw (*see* LOCK-JAW), but when the whole body is affected, it commences with stiffness of the muscles of the limbs and neck, followed shortly afterwards by violent spasms of the whole body, including the muscles of the jaw, which cannot be forced open, and the throat is also affected, making it impossible to swallow. The pain during the spasms is acute and the temperature very high, often over 107 degs. F. The disease generally terminates fatally.

Specific Treatment: When administered early, the use of antitetanic serum is a specific; five to ten c.c. given twice a day, if necessary, will suffice. If too late for using the above, the following may be tried:—

Treatment: Keep patient quiet in a dark place, and relieve spasms by giving from one-twelfth¹ to one-fourth of a grain of acetate of morphia, with from $\frac{1}{250}$ th¹ to $\frac{1}{100}$ th of a grain of sulphate of atropine in a few minims of water, injected under the skin. The dose may be repeated every six or eight hours.

To keep up the strength, try and get the patient to swallow white of egg and milk; also Sanatogen mixed with milk or water. When unable to swallow, the strength must be maintained by nutritive enemata, as peptonized milk, from one¹ to six tablespoonfuls given every three hours alternately with one or two peptonized beef suppositories. Brandy, if necessary, may be given with the milk. Attend to the bladder and bowels.

THERMOMETER: The instrument for taking the temperature, or for ascertaining whether there is fever or not, is called a clinical thermometer. The kind used for animals is the same as used for men. Those that register the heat of the body in half a minute are certainly the best for dogs.

The temperature is best taken in the rectum—bowel, for here there is less danger of breaking the instrument.

¹ According to the size of the dog. See p. 81.

The normal temperature in the bowel is 101.5 degs. F. (101½ degs.).

When it is intended to take the temperature in the bowel the point of the thermometer should be greased, and inserted into the bowel for an inch and a half, so as to be sure the mercury is quite covered. Unless there is an important reason why the temperature should not be taken in the bowel, no other method should be employed. It is possible to take it inside the thigh, but there is never the absolute certainty of the method advised.

If taken in a fold of soft skin inside thigh, the thermometer should register 100.5 degs. F. if taken correctly. If taken in the mouth there is possibility of breaking the instrument and injuring the patient. At least a minute and a half should be allowed when taking the temperature in these parts, even when a half-minute registering thermometer is used.

THIRST: A desire for excessive drinking of water in large quantities. A dog, when he is suffering from catarrh of the stomach or diabetes, which induces great thirst, will drink anything, the craving for fluid being so great, even soapy or muddy water, and he will even lick up his own urine when other fluid cannot be found. There is loss of condition, the appetite is poor, the muscles waste, particularly about the neck and limbs, whilst the stomach often becomes full and pendulous.

Treatment: The quantity of water allowed in these cases must be regulated. Little and often, or a lump of ice on the perforations of a sponge bowl or a cullender fixed in a pail. Dogs in health drink very little except in hot weather, or when taking hard exercise, but under the abnormal circumstances in question, much more than that which is taken in health may be allowed. Small dogs may be given half a pint a day, divided into four or five lots, and big dogs two quarts a day, similarly

divided into small quantities. For medicine give half a drop¹ to two drops of liquor arsenicalis (B.P.) three times a day, mixed with the drinking water. If after a week the thirst continues, give from one eighth¹ to a grain of powdered opium two or three times a day made into a pill.

Diet: Avoid red meat, but you may offer stewed rabbit with rice, also fish, tripe, milk pudding, etc.

THROAT, Sore (Simple) :

Symptoms: The back of the throat (fauces) is inflamed and slightly swollen, causing some difficulty in swallowing; the lips are moist from excessive secretion of saliva, and the glands about the outside of the throat are enlarged. The dog is often off his food, dull and listless.

Treatment: Give a teaspoonful of following medicine frequently:—

Recipe:

Chlorate of Potash	.	.	.	1 drachm.
Water to	.	.	.	6 ounces.
Mix.				

A light diet should be given for a few days, and the external enlarged glands rubbed gently, night and morning, with spirits of camphor. If the fauces remain inflamed after a few days, paint the parts night and morning for two or three days with a two per cent. solution of nitrate of silver.

TICKS (Ixodes) :

Symptoms: These parasites are generally obtained from sheep in England. They are small, blue-coloured little creatures with pointed heads, with which they dig into the dog's skin and suck the blood, and as they do so they gradually increase in size to a tick bean. They naturally cause a good deal of irritation, and make the dog bite and scratch.

Treatment: They should be carefully picked off the

¹ According to the size of the dog. See p. 81.

dog with forceps, or by applying the lighted end of a cigarette to the tick's hind-quarters, when they will let go at once. Avoid breaking them, if possible, and see that the sharp-pointed head is removed. The little spot caused by the bite of the tick soon heals, and does not require any special treatment, except painting with pure tincture of iodine. *Burn the tick.*

TONGUE, Chorea in the : See CHOREA, and treat as advised.

TONGUE, Inflammation of :

Symptoms: Swelling and redness of the tongue; it often hangs out of the mouth, the result of temporary paralysis, and the dog is unable to lap. The condition is generally caused by injury from the teeth, as a bite during a fit, or a sharp tooth. Wasps' stings will also induce the same condition.

Treatment: Wash the mouth and tongue thoroughly several times a day with a solution of borax, one teaspoonful to half a pint of water. To any wounds or ulcers apply sparingly night and morning a two per cent. solution of nitrate of silver. When the tongue is very swollen and protruding beyond the mouth, apply ice.

TONGUE, Paralysis of :

Symptoms: The tongue hangs out of the mouth, generally to one side, sometimes, but not often, in front, and there is inability to retract it. The protruding part has a dead and cracked appearance, and loses its natural pink colour. There is a difficulty in eating and drinking. This condition may follow injury to the head; it is sometimes present in cases of general paralysis, the sequel of distemper or from other causes, and it is often seen in old dogs, especially those with a short face, as pugs and Japanese spaniels, owing to loss of teeth.

Treatment: Medicine has little effect in these cases. When the result of injury or distemper, as the dog improves in general health the tongue regains strength.

A course of *nux vomica* as recommended for general paralysis assists. Examine for foreign bodies.

TONGUE, Warts on :

Symptoms: Small greyish-coloured excrescences appear all over the tongue, as well as on the cheeks and lips. Warts on the tongue and mouth are only seen in puppies. I do not remember seeing them in an adult dog. Sometimes they appear in such numbers as to inconvenience a puppy when feeding. Thick, dirty-looking saliva dribbles from the mouth; the breath is offensive. They are contagious from one puppy to another. Isolate the affected puppy or puppies.

Treatment: Wash the mouth out two or three times a day with a teaspoonful ¹ or a drachm of common washing soda dissolved in half a pint of warm water. Do not cut the warts to make them bleed, as that only increases the number. When the solution of soda does not take them away dress the warts (only a few each day) with a five per cent. solution of chromic acid applied sparingly on the end of a wooden match.

In obstinate cases a course of Donovan's solution of arsenic does good; give twice a day after food from one to five drops ¹ in a little water, or it may be mixed with the food.

TONGUE, Wounds and Ulcers of the :

Symptoms: The wound may be a simple, punctured one induced by one of the tusks during a fit, or the tip of the tongue may be bitten off, as the result of an accident. Abrasions and ulcers occur along the sides of the tongue, owing to friction against the molar teeth when thickly encrusted with tartar. Very severe and dangerous ulcers appear on the sides and point of the tongue in cases of acute gastro-enteritis (Stuttgart disease; see GASTRITIS, necrotic form), and occasionally in this disease the point of the tongue sloughs off.

¹ According to the size of the dog. See p. 81.

Treatment: In ordinary wounds of the tongue, when there is no suppuration, simply washing the mouth often with borax and water—one teaspoonful to half a pint—several times a day is sufficient, but when there is suppuration and ulceration of the parts, besides keeping clean with the borax, the ulcers should be painted twice a day with a five per cent. solution of chromic acid. The teeth should be thoroughly cleaned by scraping, especially on the inside. When the point of the tongue dies—in which case it turns to a greyish-white colour—if it does not slough off, anæsthetize the part, when it should be clipped off with scissors and the wound caused by the operation dressed two or three times a day with the chromic acid lotion.

TONSILITIS: *See* THROAT (SORE).

TOOTHACHE:

Symptoms: Dogs' teeth, as the result of their formation, do not often decay, but as the result of the accumulation of tartar the gums recede, the fangs become exposed, and suppuration takes place around the neck of the tooth, which extends into the socket or alveolar cavity. The adjoining gum becomes swollen and tender. When caries exists, dogs' teeth can be stopped.

Treatment: As a rule, in these cases it is best to extract the tooth at once, which quickly gives relief, but this is sometimes objected to by the owner. In these circumstances the tooth should be thoroughly cleaned by scraping, and strong carbolic acid applied very sparingly around the neck of the tooth on a piece of sharp wood or a pointed wooden match. The mouth should be kept clean by being sponged night and morning with a saturated solution of boracic acid.

The offending tooth has to be extracted sooner or later.

TUMOURS: A tumour, as generally understood, is a localized new formation of tissue of a morbid nature.

Every swelling is not a "tumour", and their classifica-

tion depends on their microscopic structure. They are divided into two great classes, which for the purposes of this book will be sufficient, viz.: (1) Malignant; (2) Non-malignant (simple or benign); these in their turn can be divided up into innumerable classes.

(1) Malignant tumours progressively invade and destroy the tissues of the part in which they grow, which is one of the reasons they are called malignant; another reason is that by breaking up the normal healthy tissue, including the blood-vessels of the part, when the abnormal cells may be carried away in the blood stream and set up growth in any part of the body in which they may be arrested. Operation at an early stage has a reasonable chance of being successful.

(2) Non-malignant (benign) tumours may grow to so large a size that the pressure may be a very serious matter in many ways, yet they do not invade the surrounding tissues; and so an operation has many more chances of being successful, even at later stages.

One must also bear in mind the fact that non-malignant tumours may become malignant under certain conditions, hence the wisdom of an early removal when they are diagnosed; an example which anyone will recognize is a mammary tumour, which can be both seen and felt, even in its early stages, when it is known as a fibroid tumour.

The application of iodex, which is iodine in a free state and does not stain, is the best absorbent, and can be used without fear of doing harm in the earliest stages of any tumour.

But it is wise to have them removed as soon as they are noticed. If a swelling is noticed, take the dog's temperature, because it may prove to be an abscess and the dog's temperature will be rising, whereas it does not rise in the case of the slow-growing tumour.

(CYSTS: *See* p. 53.)

ULCERS: Are of many kinds and may change, even from day to day, in their characteristics.

Symptoms: They are unhealthy wounds or open sores on the surface of the body left after decay or destruction of some of the superficial skin and subcutaneous parts of the body.

Treatment: Keep them clean by sponging two or three times a day with Jeyes' fluid—one teaspoonful to half a pint of water. For a day or two apply either hot linseed-meal poultice dusted over with powdered charcoal, or a piece of lint soaked in a saturated solution of boracic acid, placed over the wound and covered with oil-silk, then bandage. When the wound looks cleaner, healthier, and discharges less, and there are signs of healing by the formation of new skin around the edges of the wound, simply cover it over with some carbolic gauze squeezed out in a solution of boracic acid, and apply a bandage.

When an ulcer is healing very slowly, lint dipped in the following lotion and applied to the ulcer stimulates healthy action and healing:—

Recipe: The Lotion:

Tincture Calendula	.	.	.	3 drachms.
Sulphate of Zinc	.	.	.	1 scruple.
Water to	.	.	.	6 ounces.

Mix.

Apply as directed two or three times a day. In some cases dust the wound over with a powder made with one part of iodoform mixed with eight parts of boracic acid. Amyloform is also another good healing powder. It is necessary to keep the dog's tongue away from it, otherwise he is continually licking off the new skin as it forms. Use coat on bandage.

URÆMIA: Is due to the circulation in the system of those effete products that should be got rid of by the kidneys. Causation is often obscure.

Symptoms: This condition generally follows some severe illness affecting the kidneys or bladder when the suppression of the secretion of urine has occurred. In these cases the dog is very ill, there is an entire loss of appetite, giddiness, constipation, and often vomiting; a heavy, sleepy condition soon comes on, and the temperature is very high, with abdominal symptoms, sickness and diarrhœa. The whites of the eyes are greatly congested, and any urine passed is of dark colour and may be mixed with blood. Sometimes there are convulsions (for convulsions give chloral in warm milk or gruel per rectum, nitrite of amyl to inhale), but the dog soon sinks into a comatose state. As a rule these cases terminate fatally. If stone in kidney is suspected, X-ray examination will show it if present; then if symptoms warrant it, operation should be performed.

Treatment: It is often difficult to give medicine by the mouth in these cases, as the vomiting is generally so severe and frequent; but the dog is able, as a rule, to drink milk and Vichy water in equal parts. If possible, in cases of constipation, give a purgative, Epsom salts being about the best. The dose is from fifteen grains to one ounce,¹ given in water, or with milk and Vichy water if the dog can be persuaded to take it. Small doses of urotropine stimulate the action of the kidneys; from one ¹ to eight grains in a cachet may be given every four or six hours. Hot linseed-meal poultices to loins relieve the kidney congestion. If pulse is full and strong, loss of blood is indicated; leeches are useful. If pulse is weak, give:—

Tincture Digitalis	.	.	2 drachms.
Ammon. Aromat. .	.	.	5 drachms.
Aromatic Elixir .	.	.	4 drachms.
Water to	.	.	3 ounces.

Teaspoonful to tablespoonful every four hours.

¹ According to the size of the dog. See p. 81.

As to diet, milk and Vichy water are quite sufficient to sustain the dog for two or three days, when, if patient is better, fish may be given, but when this cannot be digested, peptonized milk, from one to six ¹ tablespoonfuls, may be given every two hours.

URETHRITIS :

Symptoms: Pain when passing water, or when handled; mattery discharge often tinged with blood from passage. The penis is swollen and red from the inflammation. This condition is generally caused by the passage of gravel, and it may also be the result of frequently passing a catheter.

Treatment: Hot poppy-head fomentations do good. For medicine give from three ¹ to twenty grains of hyposulphite of soda in water three times a day. If there is much pain, from two ¹ to ten drops of tincture of henbane (hyoscyamus) may be given with each dose of the above. If due to stone or gravel, an operation is called for. X-rays will decide.

Feed principally on a milk diet; some boiled fresh fish may be given, but meat must be avoided.

URINE (Incontinence) : See INCONTINENCE OF URINE.

URINE, Sediment in :

Symptoms: The urine may be passed white and cloudy, or clear, but of a high colour, and when cold there is a thick, yellowish-white deposit.

Treatment: When accompanied by some illness with a high fever, no special treatment is necessary, as the condition will pass away as the health improves, but when the symptoms described are present and the dog seems otherwise apparently well, give a course of hyposulphite of soda, from three to twenty ¹ grains two or three times a day in water or a little milk. A dog will generally take this medicine himself when mixed with milk.

¹ According to the size of the dog. See p. 81.

Diet: Milk, tripe, stewed rabbit, etc., with rice or bread, but avoid red meat.

URTICARIA: *See* NETTLE-RASH.

UTERUS, Inflammation of (Metritis):

Symptoms: This disease generally occurs after heat, and is a condition which old bitches are more subject to than young ones. The exciting cause is generally something which stops the natural discharge, as a chill, the result of washing a bitch during heat, or of getting wet by rain. Once this disease has occurred it often follows every period of œstrum. The signs of inflammation of the womb do not come on very suddenly like other inflammations; there is for two or three days a loss of appetite and dulness, the bitch is thirsty, and if the temperature is taken, there will be generally found two or three degrees of fever. There is generally loss of flesh, though the abdomen will be noticed large and harder than usual, and painful to the touch. The symptoms gradually increase in severity, and the bitch becomes very ill and weak and refuses food of all kinds, and if forced to take any it generally induces vomiting. About the third week there are signs of some discharge from the vagina, pinkish in colour and very offensive, which quickly increases in quantity and seems to pour away, a small bitch often getting rid of half a pint or more in a short time. Once the discharge commences, the bitch appears better, the temperature falls, she is brighter and is inclined to take some nourishment, but there is always a danger of the matter accumulating again. When the discharge does not come away through the natural passage, the horns of the uterus rupture, inducing acute peritonitis. Then there is a sudden collapse of the patient, the mouth and limbs go cold, the abdomen is very painful, the pulse becomes very rapid and almost imperceptible, and death occurs within twelve hours.

Treatment: There is little to be done in these cases

except operation. The bitch should be kept very quiet, in a dry, warm place; hot linseed-meal poultices should be applied to the abdomen for four or five hours daily—of course, being changed from time to time. When the poultices are removed, a flannel bandage is to be placed round the abdomen. Hot boracic lotion should be freely pumped into the vagina night and morning to relax the neck of the womb. Medicine is generally not of much use, though, if the discharge does not come away, from a half to two¹ grains of permanganate of potash made into a pill with resin ointment, and given three times a day, is beneficial in some cases. The removal of the uterus, etc., is sometimes called for, and has saved the life of very many bitches who would otherwise have perished in misery.

It is important to keep the patient's strength up. Give plenty of milk; if it is not retained try it with equal parts of Vichy water; also give Brand's beef essence and raw-meat juice. Tripe and fish may also be tried, and when there is great weakness and food is not retained by the stomach, peptonized beef suppositories may be made use of. Small quantities of brandy occasionally do good.

Once the discharge has come away, tonic medicine is to be given, and copious syringing of uterus with long vulcanite nozzle, half grain to the ounce of warm water (blood-heat), (ten grains to pint) chinisol; this does more to prevent reformation than anything. The nozzle of syringe should be directed first towards one horn of the uterus, then the other, as this is where the fluid which causes the trouble is formed. Give the following pills:—

Recipe:

Salicylate of Quinine	. . .	2 to 12 grains. ¹
Reduced Iron	. . .	6 to 36 grains.
Extract of Gentian, <i>q.s.</i>		
Mix.		

¹ According to the size of the dog. See p. 81.

Make 12 pills—one to be given two or three times a day.

Once the temperature is normal, scraped raw meat and other strengthening foods must be given.

VAGINA, Discharge from :

Symptoms: Bitches occasionally suffer from a white mattery discharge from the vagina, sometimes before or more often after being "on heat". Sometimes after pupping a bitch will continue to discharge a thick, tarry-looking blood for weeks, which causes weakness, and often upsets the milk. This is seldom confined to the vagina, but usually includes the uterus, so that the treatment would be much the same as for Metritis.

Treatment: In the former case, if the bitch is coming on heat, do not interfere with it beyond keeping the external part clean by sponging occasionally with a weak solution of Jeyes' antiseptic fluid; but when it occurs after the heat, even though the bitch may have been served, means must be taken to stop the discharge, which is very weakening.

Syringe the vagina night and morning with a warm solution of burnt alum, say ten grains to every ounce of water, and use from two to ten ¹ ounces of the solution each time. The syringe should be one with a long nozzle, and after being vaselined be passed gently into the passage as far as it will go.

Tonics should be given, as from half ¹ to three grains of sulphate of iron made into a pill. Repeat twice a day after food.

When the discharge is of a bloody nature, as occurs after pupping, syringe as just recommended, and give from half ¹ to two grains of ergotine added to each iron pill.

VAGINA, Injuries to :

Symptoms: Occur sometimes during the birth of a puppy, even when being naturally expelled, and are

¹ According to the size of the dog. See p. 81.

often caused by instruments carelessly used to extract a puppy. Injuries to the passage at this time are always dangerous, as blood-poisoning often follows. The vagina may also be injured by dragging apart a dog and bitch when "locked" together. This is quite an unnecessary procedure, as they will quickly separate if the dog's testicles be gently but firmly pressed.

The vagina is also frequently injured by the passage of some foreign substance into it, as a peg or stick, as I have seen done in cases of prolapsus of this part. In these cases there is generally a mattery discharge, and when the injury has occurred during the birth of a puppy it may be very offensive; in these cases there are symptoms of blood-poisoning, as a high temperature, loss of appetite, vomiting, etc.

Treatment: In the last-mentioned cases, that is, when the injury occurs during parturition, the passage should be first thoroughly washed out with a tepid solution of perchloride of mercury, *one in three thousand*, using from two to twenty tablespoonfuls,¹ and about two minutes afterwards all traces of this should be removed by again copiously syringing the passage with water that has recently been boiled, used just warm. Afterwards repeat the injections night and morning, now using a saturated solution of boracic acid. If temperature is high, give from one to five grains¹ of salicylate of quinine in a cachet, and if temperature is not reduced in six hours, repeat the dose.

In ordinary cases of injury, simply washing the passage out night and morning with a saturated solution of boracic acid or with a solution of permanganate of potash—one grain to every ounce of warm water—is sufficient.

VAGINA, Polypus of :

Symptoms: A pear-shaped growth with the narrow end attached to the membrane of the vagina. In these cases

¹ According to the size of the dog. See p. 81.

the bitch is frequently straining to pass water, and she is constantly licking the parts; and there is generally some mucous discharge. After a time, especially when she comes in season, the growth may show itself externally.

Treatment: Anæsthetize part (neck of polypus), draw the growth gently out as far as it will come, and placing a ligature of strong silk or catgut tightly round the neck or narrow part, then sever the polypus by cutting through the neck between the ligature and growth a full half-inch away from the ligature. Afterwards syringe the passage out night and morning with a warm solution of boracic acid.

VAGINA, Prolapsus of:

Symptoms: A condition that only occurs during the "heat" or œstrum of a bitch, or when puppies are born. It is more common amongst large and bull-bitches than other and smaller ones.

It shows itself as a pinkish, glistening body at the entrance to the vagina (vulva). As the parts become more relaxed during the "heat" the protrusion increases in size and prominence, and in a large bitch may be as big as an orange. As the result of exposure, and being rubbed along the ground when the bitch sits, the parts become sore and inflamed. The protruding part is merely a fold of thickened and relaxed membrane of the vagina, arising just in front of the passage to the bladder. The swelling, which has a broad base (and in this respect is unlike a polypus, which has a narrow constricted base), can be usually easily returned, but it comes out again almost immediately. Once a bitch has suffered from prolapsus of the vagina it generally occurs afterwards at each period of heat unless removed by operation, though sometimes when a bitch has been bred from, it does not occur again.

Treatment: The swelling disappears of itself as the "heat" passes, and when the prolapsus is small and does

not cause much discomfort it is just as well to keep it clean and to leave it alone, especially in cases where it is not intended to breed from the bitch; and even when one does wish to breed, the swelling can be returned just immediately before service, when there is no difficulty, and under ordinary circumstances she will prove in pup.

When the prolapsus is very large and it is difficult or impossible to return it, it should be removed by operation, which is not dangerous if ordinary aseptic care is taken, especially if an ecraseur is used. In any case the operation must be performed by a surgeon, and the method of operation should be left to his judgment. *The part removed must not include the urethral opening.* When the prolapsus is removed by ligature, as recommended by some, blood-poisoning and death sometimes occur.

After removal, it is necessary to syringe the vagina out night and morning with a warm solution of boracic acid or half a grain to the ounce chinosol, for a few days, and keep the bitch on a light diet. A second operation is the opening of the abdomen, drawing forward the prolapsed part and suturing it to internal walls of the abdomen.

VAGINA, Stricture of:

Symptoms: This occurs with bitches, more particularly with griffons and other small breeds. It does not cause any inconvenience, and it is seldom found out until it is wished to breed from her, when proper service is not possible in consequence of the passage being constricted with a sort of fibrous ring. It is uncommon in the vagina proper but fairly common at the mouth of the womb (os uteri).

Treatment: It consists in forcibly dilating the passage either with dilating forceps, or if these are not at hand it can easily be done with a well-greased finger. It is best to pass the point of the small finger first, and then

afterwards the forefinger. Care must be taken not to use too much force to injure the parts. There is no objection to the bitch being served immediately after the dilatation has taken place.

VAGINA, Tumour of :

Symptoms: The vagina is subject to a variety of tumours, as malignant and benign or non-malignant; there is a contagious form of granuloma to which bull-bitches seem especially liable. They vary in size from a raspberry to a Tangerine orange. They are particularly vascular, bleeding very easily. The growths extend inwards and outwards, often eating the vulva away. There is always more or less of a blood-like discharge and disagreeable odour.

Treatment: Is very largely decided by the position and size of the growths; if near the entrance of the vagina and of a non-malignant nature, the growth can be removed easily, but if situated far into the passage it may be better to open the abdomen and remove the affected part and the uterus; the bitch is then useless for breeding, of course. There is no cure for cancer when once established: the bitch should be mercifully destroyed. With regard to the contagious granuloma described, with treatment the disease can be checked and the bitch may breed, but it is seldom or ever radically cured, and it is a question whether it would not be the soundest policy to destroy all bitches affected with this disease in consequence of its contagious nature, for although one bitch does not contract it from another, a bitch going to a dog when affected in this way is certain to infect the dog, and it may be some time before it is found out with him, and in the meantime he may, if a popular stud dog, have infected many bitches. Though not a lawyer, I should imagine that the owner of a bitch knowing that she had contagious growths present and allowing her to be used by a stud dog could be made liable for damages if the stud

dog contracted the disease, and vice versa. If treatment is decided upon, the affected parts should be thoroughly curetted or scraped, and when the bleeding has ceased the raw surface from which the growths have been removed should, with the aid of a speculum, be dressed with chromic acid mixed with equal parts of water. The caustic must be repeated once or twice a week, and the scraping occasionally, if there are signs of the tumours growing again. The treatment is often a long and tedious one.

VARICOCELE : Dilated and varicose condition of the spermatic cord.

Symptoms: A swelling, varying in extent in the scrotum and along the spermatic cord, feeling not unlike a bag of worms. It generally occurs on the left side. The affected testicle of the same side generally gets smaller and soft, and the complaint is sometimes accompanied by a good deal of pain.

Treatment: Attend to general health, keep bowels well open, give regular exercise, and avoid red meat. The local application of cold water often does good. When no improvement takes place, and the condition causes the dog much discomfort, it is advisable to have the testicle of the affected side removed by operation. Such treatment of one testicle does not interfere with stud work if the remaining testicle is normal.

VERTIGO :

Symptoms: Old dogs suffering from chronic asthma, accompanied by a weak heart, often turn giddy and fall after a severe attack of coughing. The attack seldom lasts for more than a few moments, and the dog jumps up again looking rather vacant, but is soon himself.

Treatment: Give a good dose of purgative medicine, as from two to twelve¹ grains of jalapin, as the liver is often engorged with blood in cases of chronic asthma or

¹ According to the size of the dog. See p. 81.

chronic bronchitis. Afterwards, a course of the following mixture is advised:—

Recipe:

Tincture Nux Vomica	.	.	.	1 drachm.
Tincture Digitalis	.	.	.	2 drachms.
Water to	.	.	.	6 ounces.

Doses: From one to four¹ teaspoonfuls three times a day after food.

For small dogs a quarter or half the above quantity of mixture may be made.

Diet: Raw meat in moderate quantities, little and often; say three meals a day.

VOICE, Loss of :

Symptoms: Dogs sent away from home or confined anywhere, and constantly barking one hour after another as they will do, often lose their voice, and after a time, when attempting to bark, they simply make a husky noise.

Treatment: The condition soon rights itself when the cause is removed and the dog leaves off trying to bark. A teaspoonful of glycerine and water, or a little vaseline, soothes the throat in these cases.

VOMITING : See GASTRITIS.

Symptoms: Vomiting is a symptom of disease, as in indigestion, gastritis, gastric catarrh, kidney trouble, peritonitis, enteritis, stoppage of the bowels, biliousness, poisoning, etc.

Treatment: This must depend on the cause, and the case treated accordingly.

Many cases of simple vomiting may be checked by giving iced Vichy water to drink, also allowing the dog to lick ice, and in severe cases the following mixture will often be found useful:—

¹ According to the size of the dog. See p. 81.

Recipe:

Diluted Hydrocyanic Acid	.	24 drops.
Liquor Bismuth	. . .	3 drachms.
Water to		3 ounces.

From half to two ¹ teaspoonfuls to be given every three or four hours, or two to five grs. chlorotone twice a day.

Small quantities of Brand's beef or chicken essence, or Bengel's peptonized beef tea, may be given in jelly form.

When the sickness is very obstinate the stomach should be given absolute rest for six hours or longer, and if there is great weakness nourishment should be given by rectum, as just warm peptonized milk from one ¹ to six table-spoonfuls every four hours alternately with peptonized beef suppositories.

WARTS (Verruca) :

Symptoms: Excessive growth of the papillæ of the skin, resulting in the formation of small nodules of a roughened and scaly nature. They grow or develop in all parts, and old dogs, especially dachshunds, are very subject to them.

Treatment: When the wart has a narrow neck it is best removed by tying a ligature of silk tightly round it, but when it has a broad base this treatment is not practical; then some mild caustic should be applied, as acetic acid, tincture of iodine, or a twenty-five per cent. solution of chromic acid. It is only necessary just to touch the wart with the caustic on the end of a wooden match once a day. When the wart is very large, it is best removed by being cut out and the skin wound brought together by a few stitches, and then treated as an ordinary wound. Warts on the eyelids must never be cauterized, but always removed by ligature, unless there is a broad base, when they should be cut out with the points of a pair of probe-pointed scissors. Warts on very old dogs are best left alone unless they are troublesome and are frequently bleeding, when they should be removed in the

¹ According to the size of the dog. See p. 81.

ordinary way. Paint with strong tincture of thuja twice a day, and give one to three drop doses internally twice a day with water; or Crysarobin in a ten per cent. ether solution; paint once a day, or in bad obstinate cases twice a day.

WATER ON THE BRAIN: *See* HYDRO-CEPHALUS.

WEANING: (*See* article, FEEDING): Puppies must not be weaned suddenly, but by degrees, as the milk continues to be secreted, and if not drawn off by the puppies or artificially, it collects in large quantities, causing much pain, and often abscesses form. When there is a large litter, and the mother is not very strong, the youngsters may be taught to lap, when three or four weeks old, artificially prepared bitches' milk made as follows:—

Recipe:

Cows' Milk	15 ounces.
Plasmon	2 $\frac{1}{4}$ ounces.
Cream	2 $\frac{1}{4}$ ounces.
Water	5 ounces.

Mix the Plasmon into a paste with the water, then add the milk, thoroughly stirring. Put in an enamel saucepan and bring gradually to a boil, and boil for two minutes. Set aside to cool, and when cold add the cream, and well stir again.

For a change, Sanatogen may be given with milk or Spratt's invalid food.

Cows' milk diluted with water should never be given, as is often done, for the puppy's digestion is ruined by its over-dilating the stomach, for the puppy has to take an excessive quantity to get sufficient nourishment, whereas dogs have only a small stomach and require concentrated food.

Puppies should commence to be weaned when five to

six weeks old. A little scraped raw meat can be given at first, beginning with a few shreds, then in a day or two more, and at six weeks according to size, from a teaspoonful to a tablespoonful once or twice a day.

The bitch at first should be kept away from her offspring during the day, say for three or four days; afterwards she should be allowed to visit them night and morning, say for about an hour each time, so long as there are any signs of milk being secreted.

To help to disperse the milk, a dose of castor oil, from one teaspoonful to three¹ tablespoonfuls, may be given the bitch occasionally.

If anything is rubbed on the milk glands, such as methylated spirits and water, or spirits of camphor, etc., it must be carefully washed off before the bitch is allowed to return to the puppies. If the glands become hard and knotted they must be gently kneaded with camphorated oil until soft, and then the contents drawn off with the fingers or a proper breast-pump.

For hints how to feed young puppies, *see* article on FEEDING.

WEN : An encysted or fleshy sebaceous tumour.

Symptoms: A small roundish or oval growth of smooth surface situated just under the skin, moves freely about, being unattached. It is a simple growth and quite painless.

Treatment: The only thing to be done in these cases is removal by operation, which is quite a simple matter, for when the skin covering the wen is cut through the entire cyst should be dissected out (including the cyst wall). A local anæsthetic is used. The wound should be afterwards sewn up, dusted over with iodoform, and some carbolic gauze applied, which should be kept in its place with a bandage or jacket. The stitches to be removed in a week.

¹ According to the size of the dog. See p. 81.

WOMB, Inflammation of: *See* UTERUS (INFLAMMATION OF).

WORMS in the Heart (*Filaria Immitis*):

Symptoms: A common disease in China and Japan and the East generally, but I believe there has never been a case in England when the dog has been born here, though some few dogs that have been imported from the countries named show symptoms of suffering from these parasites soon after arriving in this country by frequently having convulsions, weakness in the back legs, and in some cases paralysis. A dog's heart is often irregular in action, but in these cases it is particularly so, and after some great exertion the dog dies suddenly, as a result of the worm interfering with the action of the heart.

In making *post-mortem* examinations of dogs which have died from the effect of these parasites, I have found as many as sixty worms in the heart, many of them measuring seven inches long.

Treatment: There is no known treatment that is likely to be of any service.

WORMS in the Stomach and Bowels: Internal parasites. These are of various kinds and are found in various organs: the nose, the œsophagus (gullet), the stomach, the intestines, and rectum; also the lungs, heart, and the blood.

Ascaris marginata (round worms).

Symptoms: Round worms found in stomach and intestines both of puppies and adult dogs; when found in very young puppies between a week and fortnight old these worms are much smaller than those found at a later date, when they look like pieces of cotton about an inch to an inch and a half long, and pointed at both ends. When present in such very young puppies they often cause enteritis and death. The ordinary vermifuges for very young puppies are extremely dangerous, but homœopathic remedies are both safe and effective. There-

fore for *very young puppies* give cina (worm-seed) 3 x trituration, five grains once a day for several days (a week), *morning*. Also give warm enema, every other day for a week, of salt and water, teaspoonful to tumbler, using tablespoonful for large breed puppy, *evening*. A puppy suffering badly from worms does not thrive and grow; he generally eats voraciously. The stomach is distended sometimes to a very great extent, causing difficulty in breathing, the muscles waste, the legs and neck becoming quite thin. The action of the bowels is irregular, but as a rule there is diarrhœa to a more or less extent, and sometimes vomiting, when the worms have passed into the stomach, and, if the worms are not got rid of, rickets is often the result, as the conditions caused by the worms are conducive to this trouble.

Taenia. (Tapeworms.)

Symptoms vary considerably. Some dogs may be infested with worms and yet not lose flesh, but as a result suffer from eczema, which disappears when the worms have been expelled; as a rule, the dog eats well but does not put on flesh, and has a tucked-up appearance, unthrifty coat, and is emaciated. The bowels are often irregular, the breath offensive, the coat dull and staring, and the dog is listless. Convulsions frequently appear as a result of the action of worms on the stomach and intestines of both young puppies and in adolescence, also in adults. The most positive symptoms of tapeworms is when segments looking like small pieces of dried rice are found about the underneath parts of the tail and on the dog's bed, or are seen when passed in fæces.

Worms occasionally cause paralysis of the hind legs. People often wonder how dogs, especially pet dogs who seldom leave their mistresses' side, get worms, but it is easily accounted for, first, when it is taken into consideration how susceptible they are to these parasites; a dog who eats grass where there are sheep or rabbits,

or drinks out of a pool which drains from land on which sheep are grazing, is almost certain to get tapeworm, for sheep and rabbits are the intermediate hosts of some of the most common kind. Lice, again, act as the intermediate hosts of other sorts. The same occurs when dogs kill and eat rabbits, or, as is often the case, eat both sheeps' and rabbits' dung, not only in the country but in London parks. I may here mention that tapeworms do not breed in a dog, but the eggs or larvæ must pass out of him and be swallowed by some other living creature, who is called the intermediate host. Here they develop into cysts or bladder-worms, and if these in their turn are swallowed by a dog they develop into a tapeworm, and so the cycle is completed.

Treatment: It is most important that house dogs should be kept free of worms, to prevent infection for other dogs and for human beings. As to the treatment of worms in young puppies, unless the case is serious it is not advisable to commence dosing before the puppy is five weeks old, and then a dose of the following medicine may be given three times a week, half an hour before food:—

Recipe: Worm Mixture:

Santonine	.	.	.	.	.	1 scruple.
Liquor Senna Dulc.	.	.	.	.	.	1 ounce.
Glycerine	.	.	.	.	.	$\frac{1}{2}$ ounce.
Syrup Aniseed	.	.	.	.	.	$3\frac{1}{2}$ ounces. ¹

Well mix.

Doses: For small puppies like griffons, etc., when five or six weeks old, a *quarter of a teaspoonful*; fox-terrier puppies, same age, half a teaspoonful; retriever puppies, etc., same age, three-quarters of a teaspoonful; St. Bernard puppies, one teaspoonful—to be given half an hour before the first morning meal. Repeat twice a week. The doses may be gradually increased, according to age

¹ According to the size of the dog. See p. 81.

and size of puppies. The bottle *must be well shaken* before pouring out the dose.

If the mixture is not retained, from an eighth¹ to half a grain of santonine, with from half¹ to two grains of jalapin, may be given, made into a pill, twice a week half an hour before food. When six weeks old, fox-terriers and other breeds of similar size and strength, and also, of course, bigger ones, may be dosed with powdered areca nut and santonine. Give one grain of the former to every pound the dog weighs, and to the dose of this medicine add from one eighth¹ to half a grain of santonine. This may be given in a capsule or cachet, and about half an hour afterwards give the puppy a drink of warm milk. Should the bowel not operate freely in the course of an hour, from half¹ to two teaspoonfuls of castor oil is recommended. Repeat the vermifuge in the course of a few days. "Ruby" is also an excellent remedy for worms in young dogs.

It is a good plan to dose puppies regularly from time to time, say every three months, for worms.

Alternative remedies:—

— *Recipe:*

Fluid Extract Spigelia	. . .	1 ounce.
Fluid Extract Senna	. . .	1 ounce.

Give ten to thirty drops each morning before food for three days (for round worms).

Recipe:

Oil of Chenopodium	. . .	1 ounce.
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Five to twenty drops on sugar each morning before food for two or three days (for round worms).

With regard to the treatment of tapeworms in adult dogs, there is nothing better than the old-fashioned remedy, freshly powdered areca nut. The dose is one

¹ According to the size of the dog. See p. 81.

grain to every pound the dog weighs, but more than two drachms should never be given at a time to the biggest dog. Unfortunately this medicine often induces vomiting, but if it is given in cachets it is less likely to do so. About half an hour after the medicine has been administered some warm milk or clear soup may be given the dog to drink, and a couple of hours after the dose from a dessert-spoonful¹ to two tablespoonfuls of castor oil should be given.

Another good remedy for tapeworm is the oil of male fern, and the doses are the same as for areca nut. This medicine may be bought in gelatine capsules, but castor oil must be given afterwards, as recommended after the previously mentioned remedy.

It is advisable to dose all adult dogs for worms, whether they exhibit any symptoms of having these parasites or not, about twice a year.

WORM (Maw) :

Symptoms: A dog is said to have maw worms when pieces or segments of tapeworm are found adhering to the back parts. These are not distinct worms, but ripe segments of tapeworm, which come away naturally when a worm is breaking up in the bowels, owing to natural causes and changes.

Treatment: The same as for tapeworms.

WOUNDS :

Symptoms: There are five kinds. An incised wound is a *clean cut* with a sharp instrument; a *lacerated wound* is when the skin and other parts are torn; *contused* when the skin, etc., is torn and the edges are bruised, as when caused by a blow by some blunt instrument or a fall. A *punctured* wound is one made by some sharp-pointed instrument. A wound of this kind is also often caused by the bite of a dog, one of the tusks penetrating the skin and underneath tissues. Then there is another kind

¹ According to the size of the dog. See p. 81.

of wound called a *fistulous wound*, which is generally externally small, but runs deep into the tissues as in fistula of the anus; but the most common seat of a fistulous wound in the dog is in the face, just under the eye, caused generally by some external injury which may not break the skin, but injure the ridge of bone called the zygomatic ridge, resulting in the formation of an abscess which will not heal until the large molar tooth (which is situated underneath the fistula) is removed, and then it heals quickly of itself even though it may have been running for months.

Fistulous wounds may form anywhere when an accident has happened to a part and a bone has been injured, and as the result of the inflammation the bone dies, and the wound will not heal until the dead bone comes away, either naturally or by operation.

Another example of a fistulous wound is found when a dog has swallowed something sharp, such as a pin, needle, bone, or a corn sheck, which may pierce that part of the gullet situated in the neck; as the result, a large abscess often forms, and until the foreign body has come away the wound, the result of the bursting or lancing of the abscess, will not heal. These cases are often very troublesome, as the foreign body causing the mischief may be buried very deeply in the tissues, and when small is difficult to find even with the assistance of the X-rays. In these cases pictures should be taken *from above and laterally*.

Treatment: The first and principal thing to do in the treatment of all wounds is to clean them; but sometimes if the bleeding is very severe a tourniquet should be used, if possible, or the artery picked up by Spencer Wells artery forceps and ligatured; it may not be possible to do this at once, for the dog may bleed to death, so when there is severe hæmorrhage this must be stopped by some other method. As a rule, a thick pad of antiseptic

gauze or medicated lint, or failing either of these, a clean roll of bandage will help stop bleeding, or a clean sponge wrung out in hot Condyl and water or Jeyes' and water, and bandaged firmly over the wound, will generally answer as a pressure pad. This is cleaner and better than applying a stringent, as the tincture of iron or Friar's Balsam, though in some cases it may be necessary and the pressure afterwards applied. Four or five hours afterwards the temporary dressing may be removed, and after cutting off the hair from the edges of the wound it should be thoroughly cleaned with a solution of Jeyes' disinfectant fluid, 1 in 120 of warm water, or with a teaspoonful of boracic acid in half a pint of warm water. All dirt, clots of blood, hairs, etc., must be removed, and if it is an incised wound the edges should be brought together with stitches of strong silk, catgut, or silver wire; failing any of these, pin sutures may be used in the following way: A long steel pin should be run through the skin on either side of the wound about a quarter of an inch from the edge, and the severed edges brought close together and kept there by winding a piece of cotton, figure-eight fashion, round the pin. Each pin should be placed about the third or half an inch apart, and after applying the cotton the point and head should be cut off. Afterwards dust the wound over with iodoform powder, then with a few layers of dry antiseptic gauze, and bandage. Two days afterwards the gauze may be changed, but the wound need not be interfered with so long as it is dry and there is no swelling. If there is much swelling, one suture at lower end of wound for drainage should be removed and the fluid gently squeezed out, afterwards apply the dry dressing as before. When there is much discharge the dressing must be repeated once or twice daily, the surface of the wound being cleaned with a solution of Jeyes' fluid or boracic acid lotion. On the sixth or seventh day the sutures may be removed, but

the dressing should be continued for another day or two or until the parts are quite sound.

Lacerated and Contused Wounds require practically the same treatment; they must be thoroughly cleansed with a warm solution of some disinfectant, all shreds or loose and hanging bits of skin removed with scissors, then dust over the wound a powder made with powdered iodoform one part, powdered boracic acid eight parts, mixed together, a few layers of antiseptic gauze applied and the parts bandaged. When there is much discharge the dressing should be repeated twice a day, otherwise once a day is sufficient. Do not continue the compound iodoform powder for more than three or four days. After a week or so, if the wound is healing very slowly, apply instead of the gauze some boracic ointment on lint, which may be occasionally changed for the following lotion:—

Recipe:

Sulphate of Zinc	1 scruple.
Tincture Calendula	2 drachms.
Water to	8 ounces.

This should be applied on a piece of lint doubled once and just big enough to cover the wound, which should be covered over with oil-silk, and then bandaged. Repeat the dressing twice a day. When proud-flesh, or excessive granulations—that is, the newly-formed tissue to fill up the wound—forms and grows above the surface of the surrounding skin, nitrate of silver in the form of a stitch should be applied by just wiping it once across the surface of the parts. These wounds often take a long time to heal.

In treating *punctured wounds* the principal thing to do is to encourage healing from the bottom of wound and not to let the skin heal before the parts underneath have healed, otherwise an abscess is sure to form, and there is a danger of blood-poisoning. A punctured wound should be cleaned

by being syringed out with a solution of some disinfectant, then a small strip of disinfectant gauze should be placed in the wound to prevent the mouth of wound healing. This is to be covered over with a few layers of gauze and a bandage applied. Repeat the dressing twice a day, and so long as there is any discharge the wound on the surface must not be allowed to heal.

Fistulous Wounds are sometimes very difficult to heal, and often require operating upon before they will do so—especially in cases of a fistulous wound in the anus which may extend to and open into the bowel. However, before submitting the patient to an operation try the following lotion:—

Recipe:

Chloride of Zinc	6 grains.
Tincture Calendula	1 drachm.
Water to	1 ounce.

A little to be gently syringed into the wound once every other day.

In cases of fistulous wounds which are the result of diseased bone, time must be given for the dead bone to come away. The application of hot linseed-meal poultices dusted over with powdered charcoal does good, but it is often a matter of weeks, sometimes months, before the dead bone separates from the healthy bone. When the case is very obstinate the services of a veterinary surgeon should be obtained.

Wounds the result of the bite of a dog suffering from rabies should be immediately and *freely opened* and thoroughly cauterized with fuming nitric acid or a saturated solution of chromic acid, and taken at once to a Pasteur institute for inoculation. If this is not done the dog should be destroyed, as it is running a great risk to keep a dog that has been bitten by one suffering from this disease.

TABLE OF
APPROXIMATE EQUIVALENT DOSES
IN TERMS OF THE
IMPERIAL AND METRIC SYSTEMS

MEASURES

1 minim	=	0.06 cc.
2 minims	=	0.12 "
3 "	=	0.18 "
4 "	=	0.24 "
5 "	=	0.3 "
10 "	=	0.6 "
15 "	=	0.9 "
17 "	=	1.0 "
20 "	=	1.2 "
40 "	=	2.4 "
1 fluid ounce	=	30.0 " or nearer 28.42
20 fluid ounces	=	563.0 "
1 gallon	=	4.546 litres

WEIGHTS

$\frac{1}{100}$ grain	=	0.00065 gramme
$\frac{1}{64}$ "	=	0.001 "
$\frac{1}{80}$ "	=	0.0013 "
$\frac{1}{25}$ "	=	0.0026 "
$\frac{1}{40}$ "	=	0.0065 "
$\frac{1}{8}$ "	=	0.013 "
$\frac{1}{4}$ "	=	0.016 "
$\frac{1}{3}$ "	=	0.02 "
$\frac{1}{2}$ "	=	0.032 "
$\frac{3}{4}$ "	=	0.05 "
1 "	=	0.065 "
$1\frac{1}{2}$ grains	=	0.1 "
2 "	=	0.13 "
3 "	=	0.2 "
6 "	=	0.32 "
9 "	=	0.4 "
15 "	=	0.65 "
20 "	=	1.0 "
20 "	=	1.3 grammes
$\frac{1}{2}$ oz. (av.)	=	15.0 "
{ 1 "	=	30.0 }
{ or nearer	=	28.35 }
1 pound	=	453.59 "

WEIGHTS AND MEASURES

(USED BY DOCTORS AND CHEMISTS FOR DRUGS)

APOTHECARIES' WEIGHT *

20 grains	= 1 scruple, ℥
3 scruple (60 grs.)	= 1 drachm, ℥
8 drachms (480 grs.)	= 1 ounce, ℥
12 ounces	= 1 pound, lb.

Solid drugs are compounded by this Weight

APOTHECARIES' MEASURE *

1 minim (℥)	= 1 drop.
60 minims	= 1 fluid drachm.
8 fluid drachms	= 1 fluid ounce.
20 fluid ounces	= 1 fluid pint, i. O.
2 pints	= 1 quart, ii. O.
4 quarts	= 1 gallon, i. gal.

Liquid drugs are compounded by this Measure.

AVOIRDUPOIS WEIGHT

16 drachms	= 1 ounce (437.5 grs.).
16 ounces	= 1 lb.
14 pounds	= 1 stone.
28 pounds	= 1 quarter.
4 quarters	= 1 hundredweight.
20 hundredweights	= 1 ton.

Food, etc., etc. is sold by this Weight.

A grain is the same in all weights.

The ordinary commercial measure for liquids is 20 ounces to the pint. It is sometimes used for lotions.

* Small glass measures are strongly recommended for medicines as spoons vary so greatly in size.

TABLE OF PERCENTAGE SOLUTIONS

Per- centage	Quantity of Medicant required for making			
	1 Drachm	1 Ounce	1 Pint	Parts
1	gr. .547	gr. 4.375	gr. 87.5	1 in 100
2	„ 1.094	„ 8.750	„ 175.0	1 „ 50
3	„ 1.640	„ 13.125	„ 262.5	1 „ 33.33
4	„ 2.187	„ 17.500	„ 350.0	1 „ 25
5	„ 2.734	„ 21.875	„ 437.5	1 „ 20
6	„ 3.281	„ 26.250	„ 525.0	1 „ 16.66
7	„ 3.828	„ 30.625	„ 612.5	1 „ 14.28
8	„ 4.375	„ 35.000	„ 700.0	1 „ 12.5
9	„ 4.922	„ 39.375	„ 787.5	1 „ 11.11
10	„ 5.468	„ 43.750	„ 875.0	1 „ 10

APPENDIX

“ANÆSTHETIC BY RECTAL INJECTION ”

THIS can only be administered by a qualified practitioner. The substance used is AVERTIN,¹ and the doses for a dog, terrier size, about 20 pounds in weight is $1\frac{1}{2}$ drachms, dissolved in 6 ounces water at about blood heat for injection. Of course the rectum must first be emptied by an enema. The dose should be reduced to $\frac{2}{3}$ rds this amount for a fat dog or one that is old or ill. The effect is observed in from 5 to 10 minutes after the injection and lasts half an hour or a little more. For anyone not accustomed to it, the very deep anæsthesia is rather alarming as the patient becomes literally as limp as a wet rag, and one might suspect that an overdose had been given and that recovery was impossible. I do not know of any serious after-effects, though it takes a dog about a day to recover from it properly. Although in professional hands this dosage has proved quite safe, yet it is not entirely fool-proof, and it should not be given to animals with any defect of the heart.

¹ Avertin (Bayer product).

Cause: Like Bronchitis, inflammation of the substance of the lungs is due to infection (pneumococcus or diplococcus pneumoniae, also various streptococci and micrococci). It may also be caused by the spread of inflammation from other parts, as from the bronchial tubes in bronchitis or from the pleura in pleurisy; distemper, tuberculosis, clots in lung tissue, embolism of pulmonary arteries and some other diseases. Predisposing causes may be cold, damp, unhealthy surroundings, particularly with lowered vitality. Previous attacks, surgical operations, fracture of ribs with penetration of the pleura (traumatic). Two forms (1) Lobar (Croupous) Pneumonia (a whole lobe).

(2) Lobular (Catarrhal) Pneumonia (in patches)

Symptoms: (1) Croupous (not common in dogs), first a day or two of lassitude or dullness, restlessness, shivering, rise of temperature from $101\frac{1}{2}^{\circ}$ normal, to 103° — 4° or 5° Fahrenheit, accelerated breathing, which is laboured and shallow, puffing out of cheeks with expiration. Pulse full and bounding from 150 to 190 a minute in first stage, later becoming softer and weaker, but still fast in second and third stages. Short, dry, painful cough. When approaching a favourable termination the pulse regains its normal tone and rate. In bad cases the pulse gets weaker and weaker until it is almost imperceptible. Thirst always increased, loss of appetite invariable, usually constipated but sometimes diarrhoea, urine scanty and dark coloured. In early stages minute crepitation during inspiration, sometimes during expiration, as before coughing. In secondary stages when consolidation takes place the crepitation ceases, and before complete obstruction takes place tubular breathing is noticed. During complete consolidation no respiratory sounds are heard; the consolidation commences in the posterior lobes of the lungs. Pleurisy may co-exist with pneumonia, when the friction sounds of that condition will be heard.

Dogs do not expectorate and usually swallow their sputa; it may, however, be coughed straight out of their mouth; it will be noticed at first to be transparent, sticky, tinged with blood, afterwards opaque, greenish and mucopurulent. When it is thinner and of a dark reddish-brown colour with very fetid odour it shows the onset of gangrene. Both of these latter cases are unfavourable symptoms.

(2) LOBULAR (Catarrhal). Common form in the dog: (Cf. symptoms of other form above.)

This commences with small patches of lung tissue showing lesions with intervening lobes not affected, but crepitation will be heard in most of these latter lobes. If the trouble extends more consolidation occurs, as in the lobar or croupous form. The catarrhal form is very frequently accompanied with Bronchitis; gangrene seldom occurs in a pneumonia which is primary (does not occur as a result of a secondary disease).

Treatment: Good nursing and suitable nutrition, treating the conditions according to the symptoms. *Injections of anti-pneumococci serum and pneumo bacteria.* The dose of the bacteria is given immediately Pneumonia is diagnosed, and the dose will be regulated by the age and breed of the dog, for the adult large breeds about the same as for the human subject, viz., twenty-five to fifty million dead bacteria (hypodermic injection), after which the temperature will fall; after it has risen again give another injection. With the small breeds or very young dogs smaller doses should be given accordingly. The anti-serum is used to destroy the poisons resulting from the release of the organism and gives great relief. It should also be used freely in septic cases with prostration. Prevent constipation and ensure free action of the kidneys, thus small doses of Calomel ($\frac{1}{4}$ grain three times a day for two days), half doses or less for small dogs; follow by a saline.

For the kidneys give the following: Plenty of fresh cold vichy water, gin (owing to the juniper) is useful, diluted with vichy, 20 drops to a tablespoonful according to size of dog, twice a day when necessary.

In the early stages give:

Homeopathic trituration 3 x Aconite from 5 to 15 grains every hour for high temperature and bounding pulse.

Secondary stage: when temperature and pulse are more normal give Aconite every two hours in alternation with nux vomica for heart, if condition requires stimulants, homeopathic triturations 3 x (doses as above). Oxygen (chilled) is useful when it is given in time.

Various liniments: Antiphlogistine after shaving chest walls and front of chest, then a coat and bandage to keep in position. If necessary, a blister of Epispasticus (see "Blisters.") Various remedies for cough (see "Cough.") Injections (hypodermic) of half to a teaspoonful Spirits of Camphor according to necessity as a stimulant is very useful.

Diet: Principally milk, or vichy and milk, especially when high temperature and bounding pulse is present. If stimulants are called for, brandy from 15 drops to a tablespoonful diluted with milk (according to age and size). Beef tea. Plentiful diet in convalescence. Finely chopped raw meat in addition to milk foods. Very moderate exercise until strength returns.

A tonic is necessary. Saccharated carbonated Iron is easily digested after food twice a day. Give from $\frac{1}{2}$ to 3 grains in pill form, coated, or Iron and Quinine (same dose.)

Never forget, all through Pneumonia, plenty of fresh air, no draughts, and a temperature not lower than 65° F. and not higher than 70° F., with a good intelligent nurse in attendance. Keep the temperature chart assiduously filled in, also record of pulse and times of meals and medicine.

